SONY®
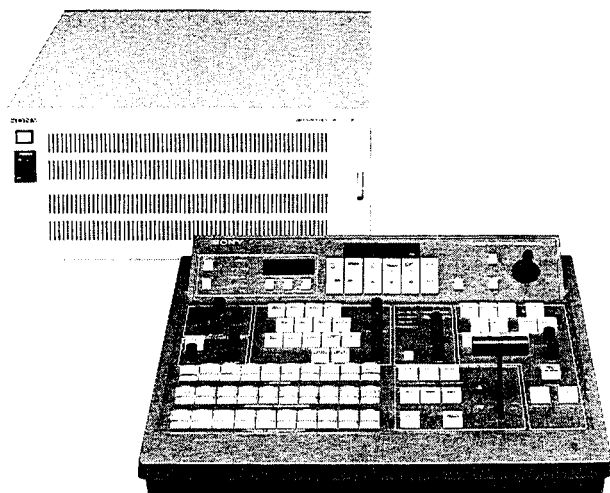
VIDEO SWITCHER

BVS-3100/3100P
BVS-3200/3200P
BVS-3200C/3200CP

BVS-3200C

OPERATION MANUAL [English]
2nd Edition (Revised 5)
Serial No. 11001 and Higher (BVS-3100)
          11001 and Higher (BVS-3100P)
          11001 and Higher (BVS-3200)
          11001 and Higher (BVS-3200P)
          21001 and Higher (BVS-3200C)
          21001 and Higher (BVS-3200CP)
Version 3.01 and Higher

WARNING
This equipment has been tested and found to comply
with the limits for a Class A digital device, pursuant to
Part 15 of the FCC Rules. These limits are designed to
provide reasonable protection against harmful
interference when the equipment is operated in a
commercial environment. This equipment generates,
uses, and can radiate radio frequency energy and, if not
installed and used in accordance with the instruction
manual, may cause harmful interference to radio
communications. Operation of this equipment in a
residential area is likely to cause harmful interference in
which case the user will be required to correct the
interference at his own expense.

You are cautioned that any changes or modifications not
expressly approved in this manual could void your
authority to operate this equipment.

The shielded interface cable recommended in this
manual must be used with this equipment in order to
comply with the limits for a digital device pursuant to
Subpart B of Part 15 of FCC Rules.

For the customers in Canada
This apparatus complies with the Class A limits for radio
noise emissions set out in Radio Interference
Regulations.

Contents

How to Use the Manuals

BVS-3100/3200/3200C series video switcher is provided with the following three manuals:

Operation Manual (this manual)
Provides the information required to understand the video switcher and set up your system. If you are the supervisor of the system, read this manual first.
The operation manual contains the following information:
• Overview of the video switcher
• Functions of parts and controls
• Connections
• Setup
• Adjustments
• Specifications

Operator's Guide
Shows you how to operate the video switcher step-by-step. Keep this guide next to the control panel for easy reference. The operator's guide contains the following information:
• Overview of the control panel
• Outline of the operations
• Operating procedures
• Settings for the effects
• Advanced operations
• Glossary
• Index

Maintenance Manual
Provides technical information for servicing the video switcher. When trouble occurs with the video switcher, refer to this manual or consult an authorized Sony representative.

The BVS-3000 series video switcher is a compact and high performance multi-purpose switcher used for broadcast and post production purposes. Using the BVS-3000 series video switcher with color video cameras, VTRs, and character generators, you can electronically edit video material with a variety of special effects.

Difference of Models
BVS-3000 series video switchers have the following composition.

Model	Number of keys	Signal format	Color system
BVS-3100	1	Composite	NTSC
BVS-3100P	1	Composite	PAL
BVS-3200	2	Composite	NTSC
BVS-3200P	2	Composite	PAL
BVS-3200C	2	Composite/Component	NTSC
BVS-3200CP	2	Composite/Component	PAL

Features

Switching capability for either component or composite video signals

You can use the BVS-3200C/3200CP for switching either component or composite video signals. When it is used for switching of component video signals, RGB and Betacam-format signals can be switched at one time. (The video switcher converts the input RGB signals into Betacam-format signals and output.) With the BVS-3100/3100P/3200/3200P, you can use only composite video signals for all effects except chroma key.

Variety of input/output connectors

The video switcher has input connectors for:
• Eight primary inputs for the video switcher to process
  (In addition to these, a color background and a color black, both internally generated, can be used as a signal source.)
• Two key source/fill inputs
• A mask input
• A downstream key source/fill input
• A chroma key source input
• A gen lock input

The output connectors are for:
• Two program outputs
  (In addition to these, the BVS-3200C/3200CP has two program outputs for component video signals.)
• A preview output
• A key bus output
• Four black burst outputs
• A black burst output for the DME-450 series digital multi effects

The video switcher also has interface connectors for tally, GPI (General Purpose Interface), editor, and DME-450 series or DFS-500/500P.

Multiple special effects

Special effects such as key mix and key wipe can be created using four buses including a program background bus, a preset background bus, and two key buses. (The BVS-3100/3100P has only one key bus.) Including the downstream key, a total of five pictures can be overlapped for the program output.

Sophisticated luminance key

The video switcher is equipped with two linear key processors (the BVS-3100/3100P has one key processor) and the key priority function. By using these processors and function together with the modification functions (key mask, and invert), a multiple of key effects are obtained.

Modifiable wipe patterns

Ten basic wipe patterns and eight mosaic wipe patterns are provided for the wipe effect. Basic wipe patterns can also be used for preset pattern key effect. Some of the wipe patterns can be modified in various aspects by using the edge softness, border, aspect, reverse, and positioning functions.

Automatic transition

The duration of transition for the wipe, mix, downstream key mix, and fade to black can be varied independently within a range of 0 through 999 frames in one-frame steps.

RGB chroma keyer

The video switcher has an RGB chroma keyer to which the Betacam-format Y/R-Y/B-Y signals can also be input.

Downstream keyer

The video switcher has a downstream keyer (linear key). The key signal for the downstream key can be modified with the border line, drop shadow, outline, mask, and invert functions.

Matte generator

The video switcher has four color matte generetors for the two key processors, downstream keyer, and background color. (The BVS-3100/3100P has one key processor and has three matte generators.) The setting of one matte generator can be copied on another generator.

Snap shot function

The video switcher can store the settings of the controls on the control panel, and that data can be sent to and stored in a connected editor as a EDL (Edit Decision List). And the data in the EDL can be sent to the video switcher to restore the settings.

Serial interface for an editor and digital multi effect system

The functions of the video switcher can be remotely controlled from the BVE-900/910 editing control unit through the RS-422 serial interface. And the status report function is available when the video switcher is controlled from the BVE-9000 editing control unit. In addition, when used with the DME-450 series digital multi effects or the DFS-500/500P DME switcher, the video switcher can control the digital multi effects.

Rack mounting

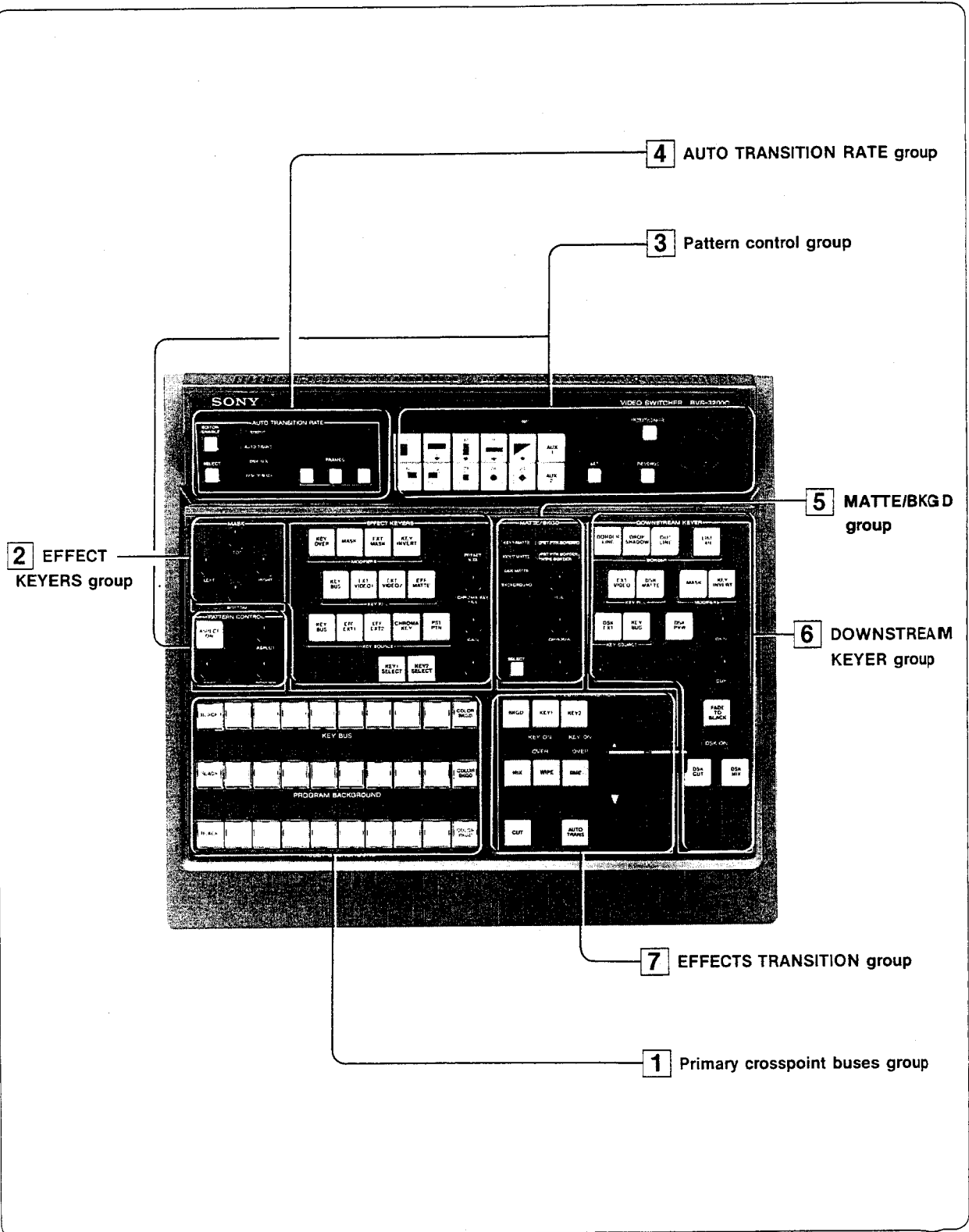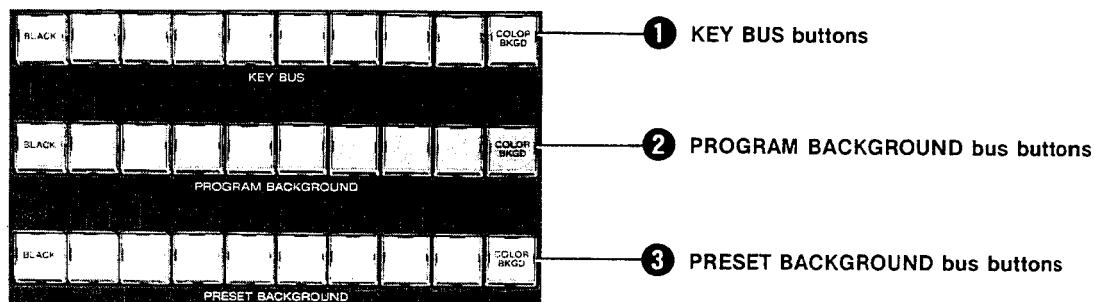The video switcher can be mounted on an EIA standard 19-inch rack.

Control Panel

4 AUTO TRANSITION RATE group

3 Pattern control group

5 MATTE/BKGD group

2 EFFECT KEYERS group

6 DOWNSTREAM KEYER group

7 EFFECTS TRANSITION group

1 Primary crosspoint buses group

1 Primary crosspoint buses group

1 KEY BUS buttons

2 PROGRAM BACKGROUND bus buttons

3 PRESET BACKGROUND bus buttons

This group consists of the three buses as listed below:
• KEY BUS
• PROGRAM BACKGROUND bus
• PRESET BACKGROUND bus
The buttons on each bus select one of the following signals: the eight primary input signals fed to the VIDEO IN connectors, BLACK or COLOR BKGD.
Any of these signals can be assigned to the desired button. (See "Setup".)

1 KEY BUS buttons
Used to select a source or fill signal for the key effect. Although there is only one row of KEY BUS buttons on the panel, there are actually two buses, and one of the two can be selected using the KEY 1 SELECT or KEY 2 SELECT button in the EFFECT KEYERS group 2. (The BVS-3100/3100P has only one key bus.)
When the BVS-3200C/3200CP is used in component mode, the KEY BUS can be used for selecting the chroma key source signal (by the KEY BUS switch setting on the connector panel).
In addition, when combined with the DME-450 series digital multi effects or the DFS-500/500P DME switcher, the KEY BUS (for the key 1 processor) is used to select the foreground picture effected by the DME-450/DFS-500.
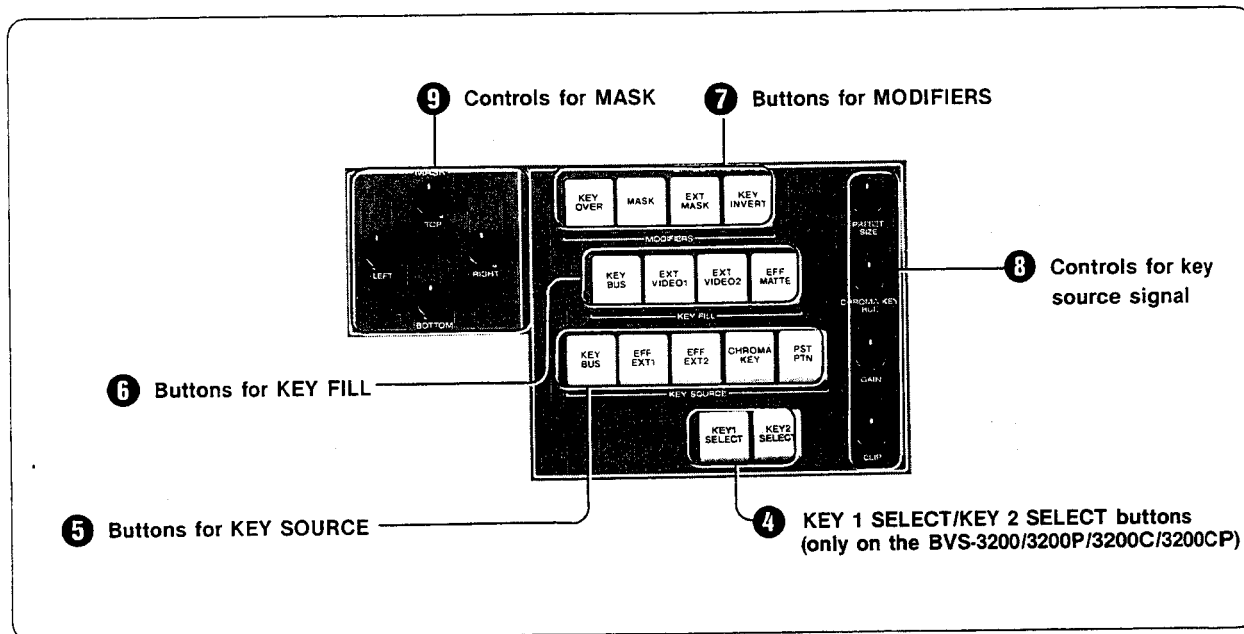
2 PROGRAM BACKGROUND bus buttons
Used to select a background picture over which the special effects such as cut, mix, wipe and key are created.

3 PRESET BACKGROUND bus buttons
Used to select the next background picture, which will be output after the on-air of the program background picture is completed by using the cut, mix, or wipe effects.

6

☐2 EFFECT KEYERS group

Controls for MASK ☉9

Buttons for MODIFIERS ☉7

Controls for key source signal ☉8

Buttons for KEY FILL ☉6

Buttons for KEY SOURCE ☉5

KEY 1 SELECT/KEY 2 SELECT buttons (only on the BVS-3200/3200P/3200C/3200CP) ☉4

This group consists of the buttons and controls used to select and control the key effects.

☉4 KEY 1 SELECT/KEY 2 SELECT buttons
(only on the BVS-3200/3200P/3200C/3200CP)
Used to select the key 1 or 2 for key effects to be controlled with the other buttons in the EFFECT KEYERS group. One of these two buttons is always lit, and you can check or change the key effects of the key processor indicated with the lit button.

☉5 Buttons for KEY SOURCE
Used to select the signal for key source, which is used to cut a hole in the background picture.
KEY BUS button: selects the signal specified in the KEY BUS of the primary crosspoint group ☐1.
EFF EXT 1 (external effect key 1) button: selects the signal supplied to the EFF EXT KEY 1 connector.
EFF EXT 2 (external effect key 2) button: selects the signal supplied to the EFF EXT KEY 2 connector.
CHROMA KEY button:
When the BVS-3000 series is used in the composite mode, this button selects the signal input to the CHROMA KEY IN connector as the chroma key source signal.
When the BVS-3200C/3200CP is used in the component mode, this button functions in one of the two ways below:
• Allows you to select the chroma key source signal from the primary input signals using the KEY BUS.
• Selects the signal input to the CHROMA KEY IN connector as the chroma key source signal.
(Function of the button is selected with CHROMA KEY IN switch on the connector panel.)

PST PTN (preset pattern) button: selects the pattern which is specified by pressing one of the pattern buttons in the pattern control group ☐3.

☉6 Buttons for KEY FILL
Used to select the signal for the key fill, which is used to fill the hole cut with the key source signal.
KEY BUS button: selects the signal specified in the KEY BUS of the primary crosspoint group ☐1.
EXT VIDEO 1 (external video 1) button: selects the signal supplied to the EFF EXT 1 connector.
EXT VIDEO 2 (external video 2) button: selects the signal supplied to the EFF EXT 2 connector.
EFF MATTE (effects color matte) button: selects the color matte signal generated with the built-in matte generator. The color is to be specified by using the controls in the MATTE/BKGD group ☐5.

7

❼ Buttons for MODIFIERS
Used to modify the key signals. (If the PST PTN (present pattern) is selected for the key source, all the buttons for MODIFIERS are unlit and disabled.)

KEY OVER button (only on the BVS-3200/3200P/ 3200C/3200CP): selects which key, KEY 1 or KEY 2, is inserted over the other. The priority is indicated with the lit OVER lamp below the KEY 1 or KEY 2 button in the EFFECTS TRANSITION group ⑦.

MASK button: masks the key signals. Whether or not to mask can be selected independently for the KEY 1 and KEY 2, although the size of the mask is common to both keys. The size of the mask can be changed using the controls for MASK (TOP/ BOTTOM/LEFT/RIGHT).

EXT MASK (external mask) button: masks the key signal with the signal supplied to the EXT MASK connector. Whether or not to mask can be selected independently for the KEY 1 and KEY 2, although external mask signal is common to both keys.

KEY INVERT button: inverts the black and white of the key source signal, so that the background is switched over the key fill and vice versa. This feature is useful when the key source to be used is black characters on a white background. The key invert can be switched on and off independently for the KEY 1 and KEY 2 .

❽ Controls for key source signal
Used to adjust the key source signal selected by using the buttons for KEY SOURCE.

PRESET SIZE control: adjusts the preset pattern size when PST PTN is selected for KEY SOURCE. This control is also used to simulate wipe transition on the preview monitor.
In addition, this control is used to adjust the size of the picture-in-picture effect (No. 1100) when the DME-450 series is used together, or adjust the effect size of the transition when the DFS-500/500P is used together.

CHROMA KEY HUE control: selects the hue for keying when CHROMA KEY is selected for KEY SOURCE.

GAIN control: adjusts the sharpness of the key edges when KEY BUS, EFF EXT 1, EFF EXT 2, or CHROMA KEY is selected for KEY SOURCE.

CLIP control: specifies the key level of the key source signal when KEY BUS, EFF EXT 1, EFF EXT 2, or CHROMA KEY is selected for KEY SOURCE. This control is also used to turn on and off the title superimpose mode of the connected DME-450 series or DFS-500/500P.

Notes
• The values set by the GAIN and CLIP controls are memorized independently for each key source, but common to the key 1 and key 2 processor.
• You can reset the values of the GAIN and CLIP controls. For details, see the section "Resetting the Values of the GAIN and CLIP Controls" (page 41).

❾ Controls for MASK
Used to specify the area (a box) to be masked for the key signal when the MASK button is selected for MODIFIERS. Each edge of the masked area can be adjusted independently using the TOP, BOTTOM, LEFT, and RIGHT controls.

3 Pattern control group

11 Pattern number indicator   **14 POSITIONER button and joystick**

SONY   VIDEO SWITCHER BVS-3200C

10 Pattern selection buttons   **13 REVERSE button**

12 SET button

15 ASPECT ON button and ASPECT control

17 BORDER control

16 SOFT control
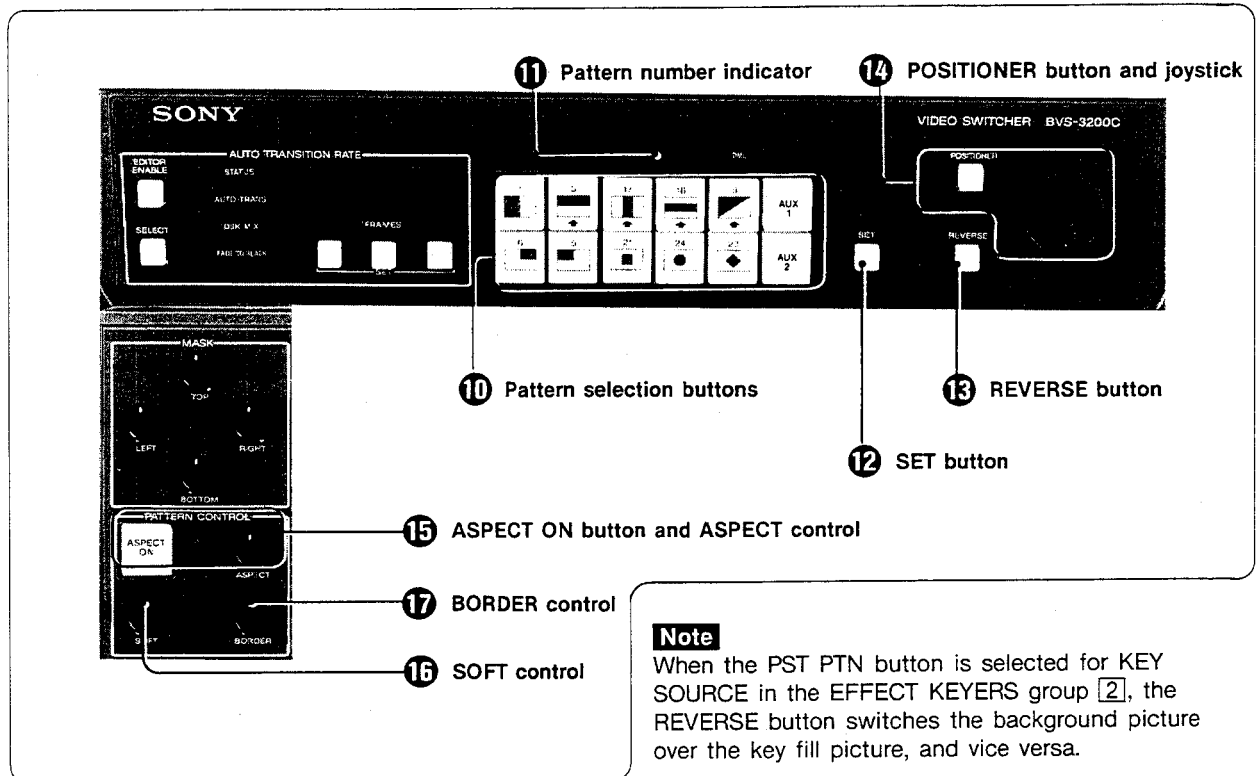
This group consists of the buttons and controls used to select and control the wipe patterns.

10 Pattern selection buttons
Determine the wipe pattern to be used. The ten patterns represented by the symbols on the buttons are available. In addition, two of eight mosaic patterns can be assigned to the AUX 1 and AUX 2 buttons, and can be used by pressing these buttons. The patterns available with the DME-450 series digital multi effects or the DFS-500/500P DME switcher can also be used by assigning them to the AUX 1 and AUX 2 buttons.

11 Pattern number indicator
Indicates the pattern number (four digits) assigned to the wipe pattern which is currently selected.

12 SET button
Used to assign the pattern numbers to the AUX 1 and AUX 2 button. To specify the number (four digits), press the pattern selection buttons, representing the thousand's digit, hundred's digit, ten's digit, and one's digit respectively. Pressing the button increases the number by one and holding down the button resets the number to 0.

13 REVERSE button
Reverses the direction of the wipe transitions. This button is also effective to reverse the effect direction of the DME-450 series or the DFS-500/500P (Effective only with the DME-450 whose ROM version number is 1.11 or higher, and with the DME-450P whose ROM version number is 2.11 or higher.)

Note
When the PST PTN button is selected for KEY SOURCE in the EFFECT KEYERS group [2], the REVERSE button switches the background picture over the key fill picture, and vice versa.

14 POSITIONER button and joystick
Change the center position of the specific wipe patterns: ▯ , ▤ , ▥ , ▣ , and ▣ . Pressing the POSITIONER button activates the joystick, and moving the joystick changes the center position of the patterns. Pressing the POSITIONER button again deactivates the joystick, and the center of the pattern comes back to the middle of the screen.
The POSITIONER and joystick are also used to change the position of the picture-in-picture effect of the DME-450 series.

15 ASPECT ON button and ASPECT control
Change the width-to-height ratio of the specific wipe patterns: ▤ , ▥ , ▨ , ▣ , ▣ , and ▣ .
Pressing the ASPECT ON button activates the ASPECT control.

16 SOFT control
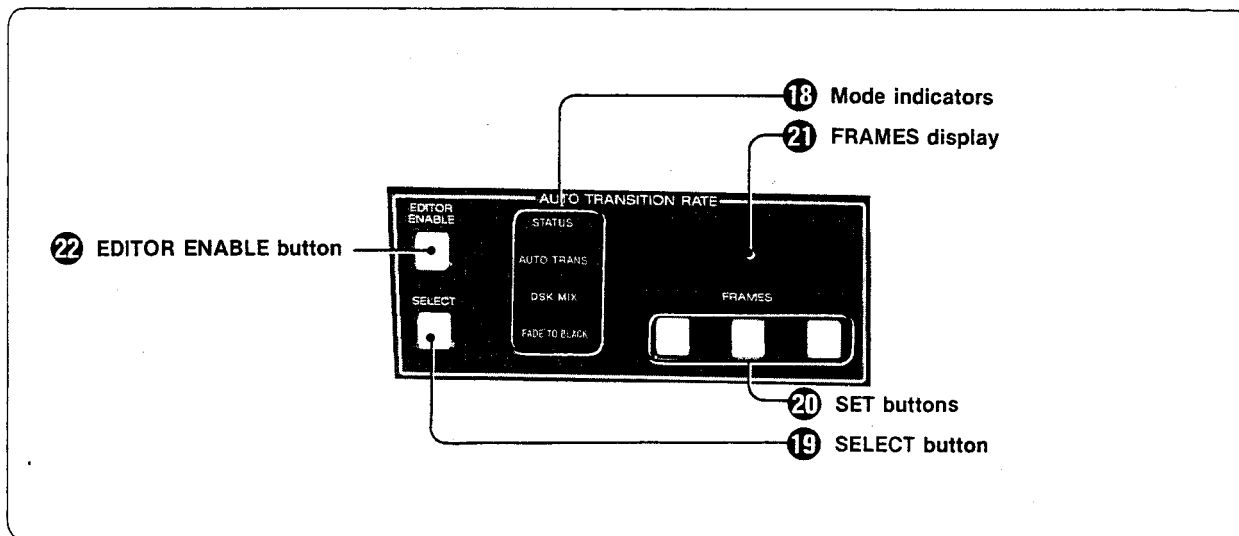Adjusts the sharpness of the wipe pattern edges and the PST PTN edges. Their edges cannot be adjusted independently.

17 BORDER control
Adjusts the border width of the wipe patterns and the PST PTN. Turning the control counterclockwise to the limit erases the border. The border width cannot be adjusted independently.
This control is also effective of the picture-in-picture effect the DME-450 series.

9

4 AUTO TRANSITION RATE group

18 Mode indicators
21 FRAMES display
22 EDITOR ENABLE button
20 SET buttons
19 SELECT button

This group consists of the buttons and controls to specify the duration of the special effects transition, to make the settings for the functions in the status mode, and to enable an editor to remotely control the video switcher.

18 Mode indicators
Indicate the mode in which the specific setting can be made using the SELECT buttons.
There are four available modes as listed below:
STATUS mode: Used to make the following settings:
  • Signal setting in the crosspoint buses.
  • Input signal selection for the tally signal outputs.
  • Snap shot data setting.
  • Self-diagnosis mode setting.
AUTO TRANS (automatic transition) mode: Used to set or change the transition duration of the wipe and mix effects performed in the EFFECTS TRANSITION group [7]. This mode is also used to set the transition duration of the DME-450 series digital multi effects or the DFS-500/500P DME switcher. (See the operator's guide for details of the durations available.)
DSK MIX (downstream key mix) mode: Used to set or change the transition duration of the DSK MIX effects performed in the DOWNSTREAM KEYER group [6].
FADE TO BLACK mode: Used to set or change the transition duration of the FADE TO BLACK effect performed in the DOWNSTREAM KEYER group [6].

19 SELECT button
Selects the desired mode. Pressing the SELECT button changes the mode in order, and the mode indicator shows the mode currently selected.
To enter the STATUS mode, press the SELECT button until a beep sounds.

20 SET buttons
Specify the duration of the automatic transition for the AUTO TRANS, DSK MIX or FADE TO BLACK effect, or set the functions in the STATUS mode.
The duration can be specified from 0 through 999 frames in one-frame steps. The three buttons represent the hundred's, ten's and one's digits from left to right. Pressing the buttons increases the corresponding digit by one from 0 through 9 and to 0 again. Holding down the buttons resets the corresponding digit to 0.

21 FRAMES display
Shows the data set in the STATUS mode or the current duration of the transition.

22 EDITOR ENABLE button
Enables the connected editor to control the video switcher. While holding down the SELECT button until and after a beep sounds, pressing the EDITOR ENABLE button enables the video switcher to accept the GPI (General Purpose Interface) signals. The video switcher can also be controlled from its own control panel.

10

5 MATTE/BKGD (matte/color background) group

- 23 Mode indicators
- 25 Controls for matte/color background
- 24 SELECT button
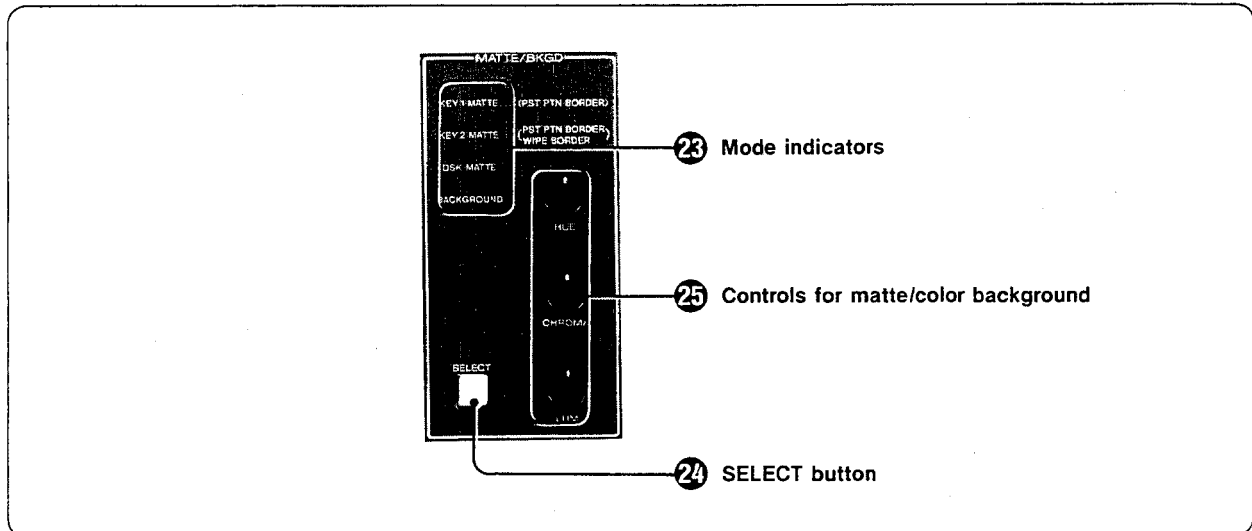
This group consists of the controls to adjust the color mattes used for the key fill, the wipe border, and the color background.

23 Mode indicators

Indicate the mode in which the specific color matte can be adjusted. There are four modes available in this group:

KEY 1 MATTE mode: You can adjust the color matte for the effect key 1 preset pattern border, and the effect key 1 fill at the same time.
This mode also allows you to adjust the border color of the effects of the connected DME-450 series.

KEY 2 MATTE mode: You can adjust the color matte for the wipe pattern border, the effect key 2 preset pattern border, and the effect key 2 fill at the same time. (The BVS-3100/3100P has no effect key 2. Wipe pattern border color is adjusted in the KEY MATTE mode.)

DSK MATTE (downstream key matte) mode: You can adjust the color matte for the downstream key fill and the outline of the DOWNSTREAM KEYER at the same time.

BACKGROUND mode: You can adjust the color matte of the color background.
This mode also allows you to adjust the background color of the effects of the DME-450 series.

24 SELECT button

Selects the color matte to be adjusted among KEY 1 MATTE, KEY 2 MATTE, DSK MATTE, and BACKGROUND color. Pressing the SELECT button changes the selection, and the current selection is shown with the lit mode indicators.

25 Controls for matte/color background

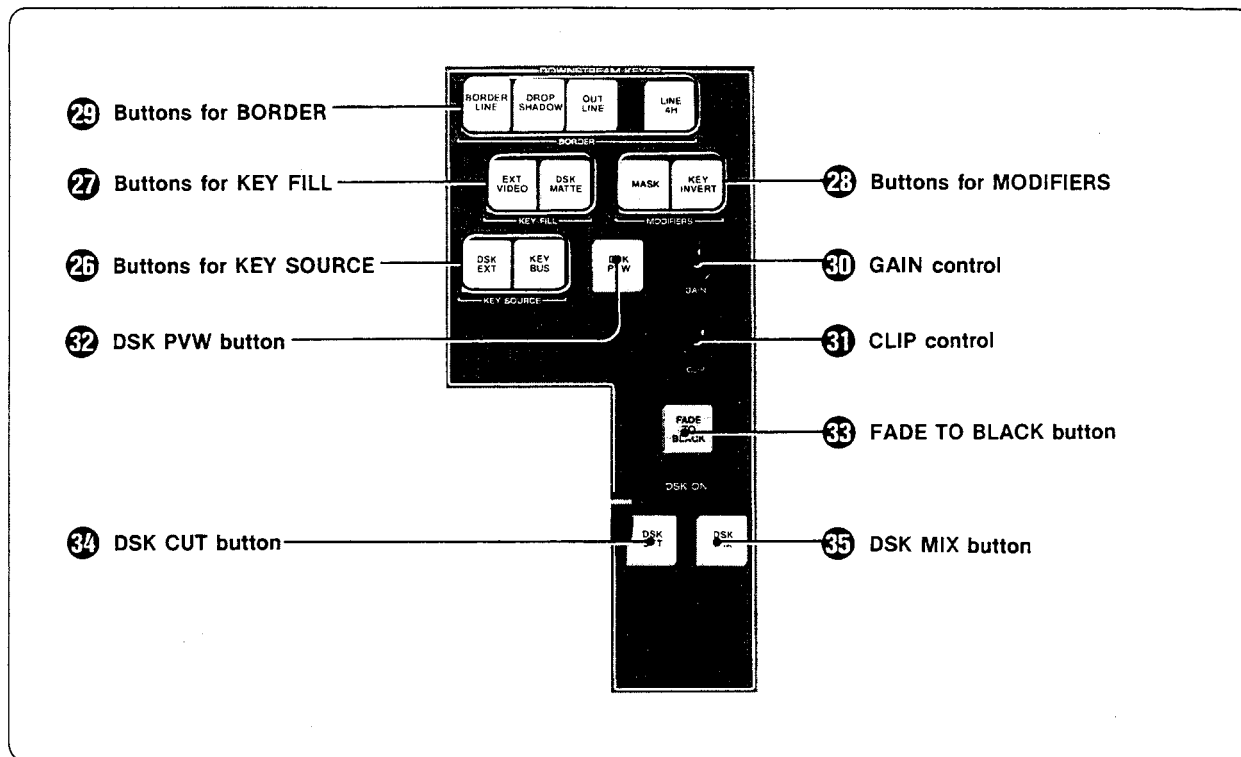**HUE control:** adjusts the hue of the color matte.
CHROMA control: adjusts the chrominance level of the color matte.
LUM (luminance) control: adjusts the luminance level of the color matte.

Note

If the chroma is set at a very high level, changing the LUM (luminance) control automatically adjusts the chroma level to an appropriate level so that the color matte signal conforms to the signal standard.

6 DOWNSTREAM KEYER group

Buttons for BORDER

Buttons for KEY FILL

Buttons for KEY SOURCE

DSK PVW button

DSK CUT button

Buttons for MODIFIERS

GAIN control

CLIP control

FADE TO BLACK button

DSK MIX button

This group consists of the buttons and controls used to select and control the downstream key effects.

Buttons for KEY SOURCE
Used to select the key source signal for the downstream key effect.
DSK EXT (external downstream key) button: selects the signal supplied to the DSK EXT KEY connector.
KEY BUS button: selects the same signal as specified in the KEY BUS of primary crosspoint buses group 1 for the key 1 source.
(With the BVS-3200/3200P/3200C/3200CP, when this button is activated, the KEY 1 SELECT button in the EFFECT KEYERS group 2 is lit.)

Buttons for KEY FILL
Used to select the key fill signal for the downstream key effect.
EXT VIDEO (external video) button: selects the signal supplied to the DSK EXT VIDEO IN connector (on the BVS-3100/3100P/3200/3200P) or the KEY FILL INPUTS DSK EXT connector (on the BVS-3200C/3200CP).
DSK MATTE (downstream key matte) button: selects the color matte signal generated with the built-in matte generator.

Buttons for MODIFIERS
Used to modify the key signal for the downstream key.
MASK button: masks the key signal. The size of the masked area can be changed with the controls for MASK (TOP/BOTTOM/LEFT/RIGHT) in the EFFECT KEYERS group 2.

Note
The mask signal generator is common to the DOWNSTREAM KEYER and the EFFECT KEYERS, so the masked area size is changed at the same time for these key processors.

KEY INVERT button: inverts the black and white of the key signal, so that the background is switched over the key fill, and vice versa. This feature is useful when the key source to be used is black characters on a white background.

12

㉙ Buttons for BORDER
Used to modify the border of the downstream key signal.

BORDER LINE button: adds border lines to the downstream key signal. Pressing the button switches the border line fill signal between black and white. (The white level can be adjusted with the DSK BORDER LUM VR on the SD-20 board). To remove the borderlines, press the DSK MATTE or EXT VIDEO button for KEY FILL.

DROP SHADOW button: adds a drop shadow to the downstream key signal. Pressing the button switches the drop shadow fill signal between black and white. (The white level can be adjusted with the DSK BORDER LUM VR on the SD-20 board). To remove the drop shadow, press the EXT VIDEO or DSK MATTE button for KEY FILL.

OUTLINE button: inserts the outline of the downstream key signal on the program output signal. The outline is filled with the color of the DSK MATTE. To remove the outline, press the DSK MATTE button or DSK MATTE for KEY FILL.

LINE 4H button: selects the width of the border line, the drop shadow and the outline between 2 H and 4 H. Pressing and lighting up the button sets the width to 4 H, pressing again and putting out the button sets the width to 2 H.

㉚ GAIN control
Adjusts the sharpness of the downstream key edges.

㉛ CLIP control
Specifies the key level for the down stream key source signal.
When the downstream keyer is selected in the DME-450 series presetting function, this control turns on and off the title superimpose function of the DME-450 series or the DFS-500/500P. (See the operator's guide for details.)

Notes
• Even if the KEY BUS is selected for the downstream key source, the settings of the GAIN and CLIP controls are memorized independent of those for the effect keyers.
• You can reset the values of the GAIN and CLIP controls. For details, see the section "Resetting the Values of the GAIN and CLIP Controls" (page 40).

㉜ DSK PVW (downstream key preview) button
Used to preview the downstream key effect on the preview monitor. By pressing and lighting up this button, the picture output from the PVW OUT connector is switched from the one selected in the PRESET BACKGROUND bus to the one selected in the PROGRAM BACKGROUND bus, and the downstream key is inserted on the picture.
And this function is automatically deactivated when the down stream keying is executed by pressing the DSK CUT or DSK MIX button.

㉝ FADE TO BLACK button
Automatically makes the picture which is output through the PGM OUT connector fade out to black. The transition duration of the fading can be specified in the AUTO TRANSITION RATE group ④.
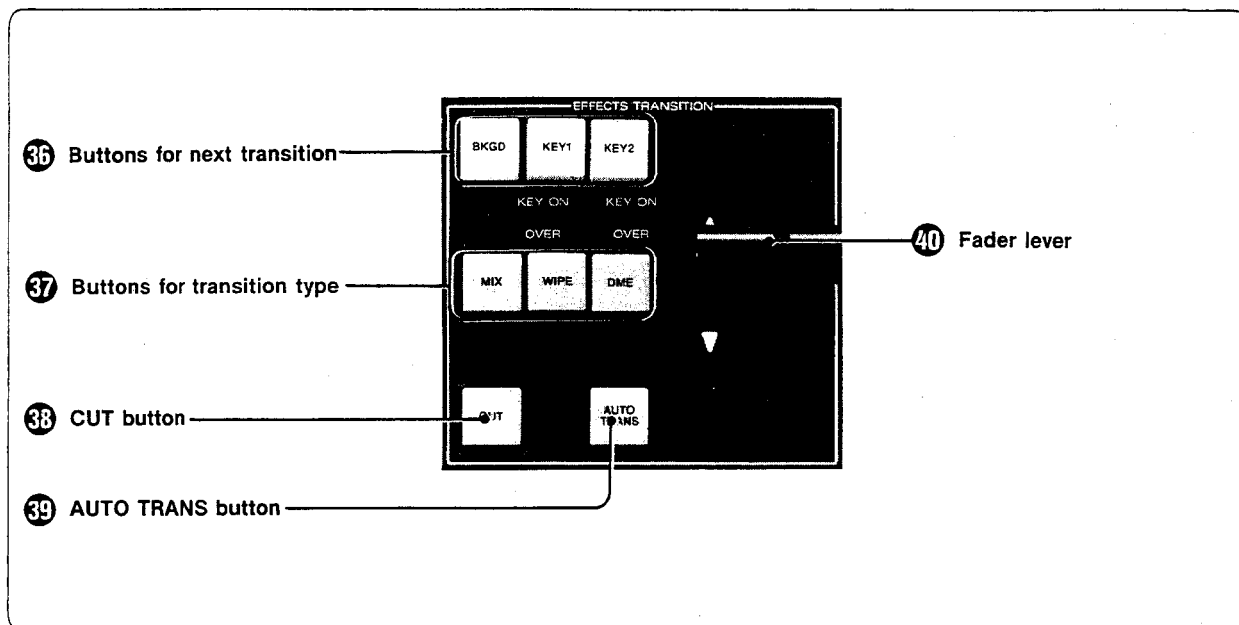
㉞ DSK CUT (downstream key cut) button
Instantaneously inserts the downstream key into the picture output through the PGM OUT connector.

㉟ DSK MIX (downstream key mix) button
Mixes the downstream key on the picture output through the PGM OUT connector. The transition duration of the mix can be specified in the AUTO TRANSITION RATE group ④.

13

7 EFFECTS TRANSITION group

36 Buttons for next transition

37 Buttons for transition type

38 CUT button

39 AUTO TRANS button

40 Fader lever

This group consists of the buttons and controls used to select the effects type and the transition type and perform the effects transition. The DME-450 series digital multi effects or the DFS-500/500P DME switcher can also be controlled by using these buttons and controls.

36 Buttons for next transition
Used to select the pictures to be changed in the next transition.
BKGD (background) button: selects the picture specified in the PRESET BACKGROUND bus as the background picture for the next transition.
KEY 1 and KEY 2 buttons: inserts or removes the KEY 1 and/or KEY 2 on the background picture when the next transition is executed. These two buttons can be selected at one time or together with the BKGD button. (The BVS-3100/3100P does not have the KEY 2 button.)

37 Buttons for transition type
Used to select the transition type.
MIX button: executes the mix of the background picture and/or the key.
WIPE button: executes the wipe of the background picture and/or the key.
DME button: allows the video switcher to use the effects of the DME-450 series digital multi effects or the DFS-500/500P DME switcher together with the effects of the video switcher.
When this button is on, all the functions of the DME-450 series except for that of the FRGD FREEZE IN/OUT switch can be controlled from the video switcher's control panel. (For the DFS-500/500P, refer to the operator's guide.)

38 CUT button
Used to instantaneously switch the background picture and/or insert the key signal, synchronized with the vertical blanking timing.

39 AUTO TRANS (automatic transition) button
Used to automatically execute the transition of the background picture and/or the key. The direction of the transition is indicated with the lit lamps beside the fader lever. Pressing this button during transition makes the transition pause, and pressing the button again resumes the transition.
When the DME button is on, this button executes the effects of the DME-450 series or the DFS-500/500P.

40 Fader lever
Used to execute the transition manually. In response to the movement of the fader lever, one of the lamps to the left of the lever lights up to indicate the direction the lever should be moved to complete the transition.
The torque to move the lever can be adjusted by turning the screw located to the right of the arm.

14

- After turning on the unit, move the fader level from one limit to the other. This activates the fader lever.
- The control panel illumination is automatically turned off if the unit is not operated for about an hour. This feature is called the panel saver function. In this mode, the unit displays "3100" (or "3200"), moving from right to left, in the pattern number indicator. The unit continues to output the video signal in this status.

  When the unit is next operated, either from the control panel or the editor, the illumination is automatically turned back on.

  To deactivate the panel saver function, see the section "Setting the Panel Saver Function" (page 44).

Connector Panel (Main Unit)

BVS-3100/3100P/3200/3200P

Input connectors

② KEY SOURCE INPUTS connector group

④ EXT MASK connector

⑤ DSK connector group

⑥ CHROMA KEY INPUTS connectors

⑦ GEN LOCK (EXT BLACK BURST) connectors

⑧ AC inlet

③ KEY FILL INPUTS connector group

① VIDEO IN connector group

⑨ ⏚ (ground) terminal

This photograph shows the connector panel of the BVS-3100P, but the connectors on other models BVS-3100/3200/3200P are identical to those shown above.

❶ VIDEO IN connector group (BNC type)
Used to input composite video signals from VTRs via a Time Base Corrector (TBC) or from video cameras or camera control units. These input signals are chosen for the primary inputs by using the buttons in the primary crosspoint buses group. The signals can be assigned to any of the buttons in the primary crosspoint buses group.
Each connector has a loop-through output.

❷ KEY SOURCE INPUTS connector group (BNC type)
EFF EXT KEY 1/2 connectors: Used to input the effects key source signals. Each of the EFF EXT KEY 1 and the EFF EXT KEY 2 connectors has a loop-through output.

❸ KEY FILL INPUTS connector group (BNC type)
EFF EXT 1/2 connectors: Used to input the signal to fill the effect key. Each connector has a loop-through output.

❹ EXT MASK connector (BNC type)
Used to input the signal to mask the key signal. The connector is internally terminated at 75 ohms, and has no loopthrough output.

❺ DSK connector group (BNC type)
EXT VIDEO IN connector: Used to input the signal to fill the downstream key signal.
EXT KEY connector: Used to input the downstream key source signal.
Each connector is internally terminated at 75 ohms, and has no loop-through output.

❻ CHROMA KEY INPUTS connectors (BNC type)
Used to input the chroma key source signal. The connectors are used together to accept Y/R-Y/B-Y or RGB signals. The signal format is to be selected using the CRK R-Y, B-Y/RGB switch on the internal board.
Each connector is internally terminated at 75 ohms, and has no loop-through output.

❼ GEN LOCK (EXT BLACK BURST) connectors (BNC type)
Used to input the reference black burst signal when operating the unit synchronized with an externally-generated reference signal. One of the two connectors are used for the loop-through output.

❽ AC inlet
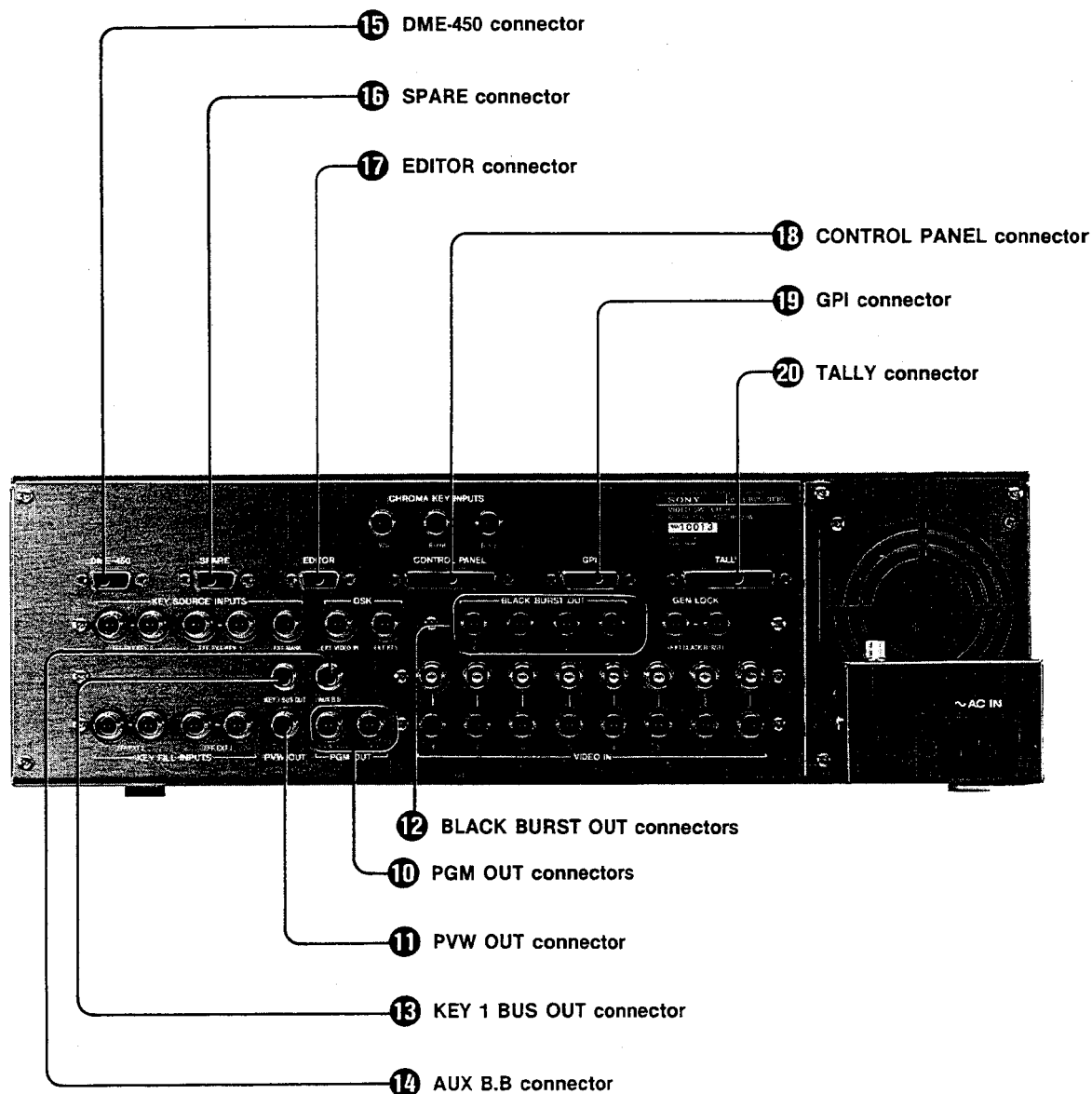Connect to an ac outlet using the supplied power cord.

❾ ⏚ (ground) terminal
Connect to a grounding line if necessary.

Note on loop-through outputs
When a loop-through output is not used, terminate one of the pair connectors using a 75-ohm termination plug.

Output and interface connectors

15 DME-450 connector

16 SPARE connector

17 EDITOR connector

18 CONTROL PANEL connector

19 GPI connector

20 TALLY connector

12 BLACK BURST OUT connectors

10 PGM OUT connectors

11 PVW OUT connector

13 KEY 1 BUS OUT connector

14 AUX B.B connector

This photograph shows the connector panel of the BVS-3100P, but the connectors on other models BVS-3100/3200/3200P are identical to those shown above.

10 PGM OUT (program output) connectors (BNC type)
Used to connect a program monitor, VTRs, or a video signal distributor. These connectors output the final product created with the video switcher in the form of a composite video signal.

11 PVW OUT (preview output) connector (BNC type)
Used to connect a preview monitor. This connector outputs the video signal which will be output from the PGM OUT connector when the effect transition is completed. You can see the result of the transition before actually executing it on the monitor connected to this connector.

18

⑫ BLACK BURST OUT connector (BNC type)
Used to output the black burst signals to be supplied to the connected VTRs or cameras or the DFS-500/500P DME switcher as the reference signal for the synchronized operation of the connected equipment. By inputting an externally-generated reference signal to the GEN LOCK connector and setting the B.B EXT/INT switch on the SD19 board to EXT, these connectors output that reference signal. Otherwise, these connectors output the internally-generated black burst signal.

⑬ KEY 1 BUS OUT connector (BNC type)
When composing a composite video signal system with the DME-450 series digital multi effects or the DFS-500/500P DME switcher, connect the KEY 1 BUS OUT connector to the VIDEO IN 1 connector (BNC type) on the DME-450 series or the DFS-500/500P.

⑭ AUX B.B (auxiliary black burst) connector (BNC type)
Connect to the VIDEO IN 3 connector on the DME-450 series digital multi effects to synchronize the DME-450 series with the video switcher. To make the video phase and the hue of the DME-450's PGM OUT signal accurate, adjust the sync and subcarrier phases of the output signal of this connector using the appropriate switches and controls on the SD-20 board.

⑮ DME-450 connector (9-pin)
Connect to the SWITCHER/EDITOR connector on the DME-450 series digital multi effects or to the EDITOR connector on the DFS-500/500P DME switcher using an optional RCC-5G/10G/30G remote control cable (9-pin). This connection enables the control of the DME-450 series or the DFS-500/500P from the control panel of this unit or from an editor through the RS-422 serial interface.

⑯ SPARE connector (9-pin)
Not used.

⑰ EDITOR connector (9-pin)
Connect to an editing control unit such as the BVE-900/910, BVE-9000 or others, using an optional RCC-5G/10G/30G remote control cable (9-pin). This connection enables the control of the video switcher from those editors through the RS-422 serial interface.

⑱ CONTROL PANEL connector (25-pin)
Connect to the supplied control panel using the supplied 25-pin cable (5 m, 16 ft.) or an optional 25-pin cable (30 m, 98 ft.). This connection enables the control of the video switcher from the control panel through the RS-422 serial interface.

⑲ GPI (General Purpose Interface) connector (15-pin)
To activate the automatic transitions of the AUTO TRANS, DSK MIX, FADE TO BLACK, and GPI SEL (one of the above transitions selected in the AUTO TRANSITION RATE group on the control panel), make short-circuits between the pins 1 and 2, 3 and 4, 5 and 6, and 7 and 6 of this connector. For cable connection, use the supplied 15-pin D-SUB connector plug (male).
While holding down the SELECT button until and after a beep sounds, turning on the EDITOR ENABLE button in the AUTO TRANSITION RATE group ④ enables the video switcher to accept the GPI signal.

Pin assignment of the GPI connector

Pin number	GPI input
1, 2	AUTO TRANS
3, 4	DSK MIX
5, 6	FADE TO BLACK
7, 6	GPI SEL

• The pins 2, 4 and 6 are internally connected to a common bus.
• The pins 9 through 14 are not used.

⑳ TALLY connector (25-pin)
Used to output the tally signals derived from eight inputs, which can be selected from the VIDEO IN 1 through 8, EFF EXT KEY 1/2, EFF EXT 1/2, DSK EXT VIDEO IN, DSK EXT KEY, CHROMA KEY IN inputs and others. Connect to cameras or other equipment whose output is supplied to those input connectors. Assignment of input signals to tally number 1 through 8 is performed in the AUTO TRANSITION RATE group ④. The inputs to the VIDEO IN 1 through 8 connectors are assigned to tally number 1 through 8 at factory. (See "Setup.") The contact of each relay used to switch the current for the connected lamp allows a maximum of 200 mA/24 V switching.

Pin assignment of the TALLY connector

Pin number	Tally number	Factory-set input
1, 2	1	VIDEO IN 1
3, 4	2	VIDEO IN 2
5, 6	3	VIDEO IN 3
7, 8	4	VIDEO IN 4
9, 10	5	VIDEO IN 5
11, 12	6	VIDEO IN 6
15, 16	7	VIDEO IN 7
17, 18	8	VIDEO IN 8

• The pins 2, 4, 6, 8, 10, 12, 16 and 18 are internally connected to a common bus.
• The pins 13, 19, 20, 21, 22, 23, and 24 are not used.

Input connectors

④ KEY FILL INPUTS connector group

③ KEY SOURCE INPUTS connector group

⑦ GEN LOCK (EXT BLACK BURST) connectors

⑧ AC inlet connector

⑨ 🝡 (ground) terminal

② INPUT SELECT switch

① VIDEO IN connector group

⑥ CHROMA KEY IN switch

⑤ CHROMA KEY IN connectors
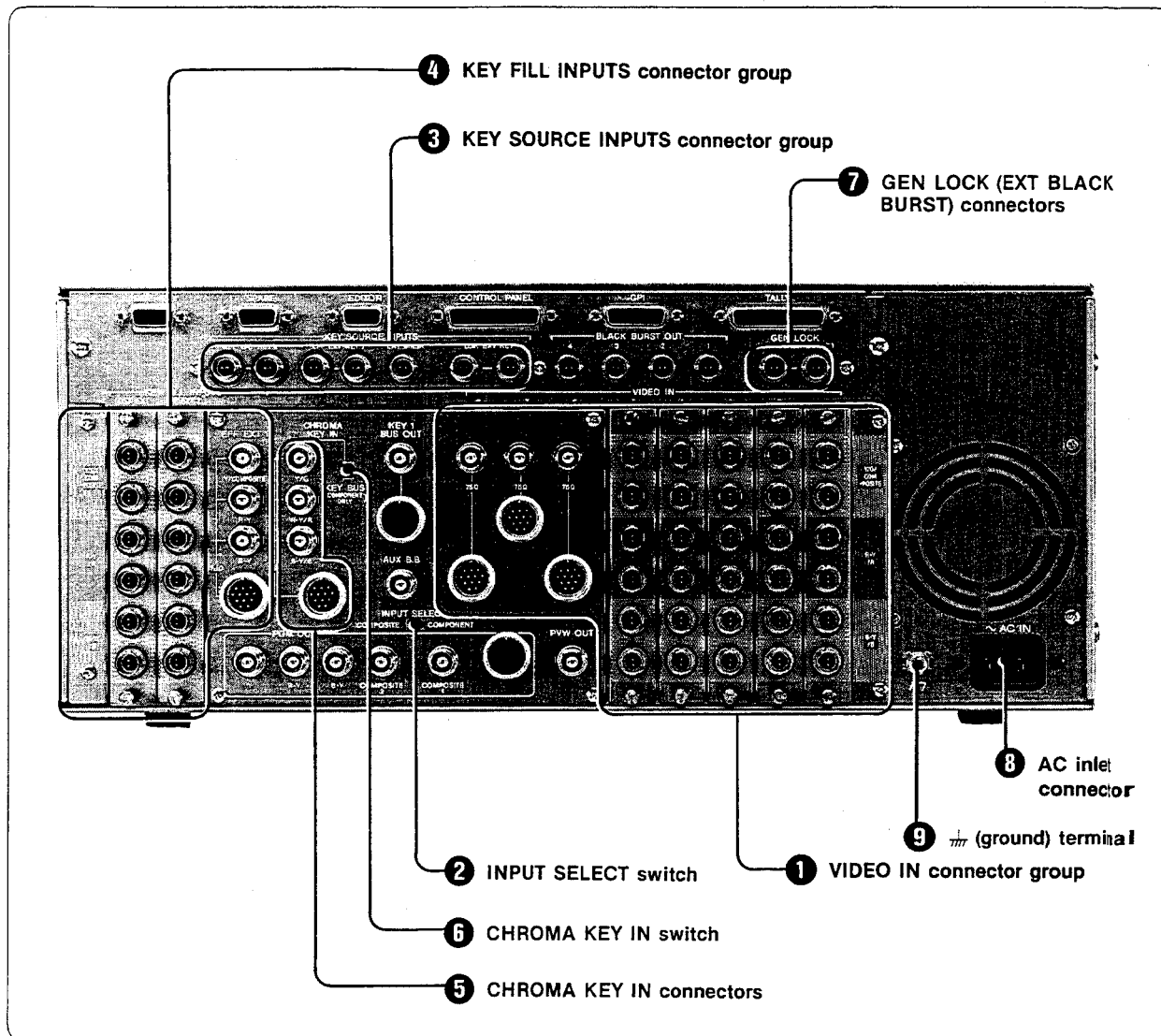
① VIDEO IN connector group
Used to input the video signals from VTRs via a Time Base Corrector (TBC) or from video cameras or camera control units. These input signals are chosen for the primary inputs by using the buttons in the primary crosspoint buses group. The signals can be assigned to any of the buttons in the primary crosspoint buses group.
The BVS-3200C/BVS-3200CP accepts composite video signal or component video signal. The signal format is selected with the INPUT SELECT switch. When the component video signal is selected as input, either the Betacam-format Y/R-Y/B-Y signal or the RGB signals can be input. The signal format is selected with the Y, R-Y, B-Y/RGB switch on the internal board.

VIDEO IN 1 through 5 connectors (BNC type): Each connector group consists of the COMPOSITE/Y/G, R-Y/R, and B-Y/B connectors to accept three types of signals.
Each of these connectors has a loop-through output.
VIDEO IN 6 through 8 connectors (BNC type and 12-pin): Each connector group consists of a BNC connector to accept composite video signal, and a 12-pin multi connector to accept Y/R-Y/B-Y signals directly from a Betacam camera or VTR via a cable with 12-pin connector; only one of the two connectors can be used. The BNC connector and the 12-pin multi connector have no loop-through output, and composite video input and the Y input are connected internally. The Y/R-Y/B-Y input signals are terminated at 75 ohms.

② INPUT SELECT switch
Used to switch the format of the input signals between composite video signal and component video signal.

③ KEY SOURCE INPUTS connector group
(BNC type)
EFF EXT KEY 1/2 connectors: Used to input the effects key source signals. Each of the EFF EXT KEY 1 and the EFF EXT KEY 2 connectors has a loop-through output.
EXT MASK connector: Used to input the signal to mask the key signal. The connector is internally terminated at 75 ohms, and has no loop-through output.
DSK EXT KEY connectors: Used to input the downstream key source signal. The connector has a loop-through output.

④ KEY FILL INPUTS connector group
EFF EXT 1 connectors (BNC type and 12-pin)
Used to input the signal to fill the effect key. The BNC-type connectors are used together to accept Y/R-Y/B-Y signals, or composite video signal. The 12-pin connector is used to accept Y/R-Y/B-Y signals directly from a Betacam camera or VTR. The BNC connectors and the 12-pin connector are connected internally, and terminated at 75 ohms. These connectors have no loop-through output.
EFF EXT 2 connectors (BNC type)
Used to input the signal to fill the effect key. The connectors are used together to accept Y/R-Y/B-Y signals, RGB signals, or composite video signal. Each of these connectors have a loop-through output.
DSK EXT connectors (BNC type)
Used to input the signal to fill the downstream key. The connectors are used together to accept Y/R-Y/B-Y signals, RGB signals, or composite video signal. Each of these connectors have a loop-through output.

⑤ CHROMA KEY IN connectors (BNC type and 12-pin)
Used to input the chroma key source signal. The BNC-type connectors are used together to accept Y/R-Y/B-Y or RGB signals. The 12-pin connector is used to accept Y/R-Y/B-Y signals directly from a Betacam camera or VTR. The signal format is to be selected using the CRK R-Y, B-Y/RGB switch on the SD-20 board. The BNC and 12-pin connectors are both terminated at 75 ohms.

⑥ CHROMA KEY IN switch
Used to set how to select the chroma key source signal when the BVS-3200C/3200CP is operated in the component mode.
KEY BUS: The chroma key source signal is to be selected from the primary input signals using the KEY BUS of the primary crosspoint buses group ①.
CHROMA KEY IN: The chroma key source signal is fed from the CHROMA KEY IN connectors (BNC or 12-pin type).
When the BVS-3200C/3200CP is operated in the composite mode, the chroma key source signal is derived only from the CHROMA KEY IN connector (BNC type).

⑦ GEN LOCK (EXT BLACK BURST) connectors
(BNC type)
Used to input the reference black burst signal when operating the unit synchronized with an externally-generated reference signal. One of the two connectors are used for the loop-through output.

⑧ AC inlet
Connect to an ac outlet using the supplied power cord.

⑨ ⏚ (ground) terminal
Connect to the grounding line if necessary.

Note on loop-through outputs
When a loop-through output is not used, terminate one of the pair connector using a 75-ohm terminator plug.

Output and interface connectors

⑮ DME-450 connector

⑯ SPARE connector

⑰ EDITOR connector

⑱ CONTROL PANEL connector

⑲ GPI connector

⑳ TALLY connector

⑫ BLACK BURST OUT connectors

⑪ PVW OUT connector

⑩ PGM OUT connector group

⑭ AUX B.B connector

⑬ KEY 1 BUS OUT connectors

22
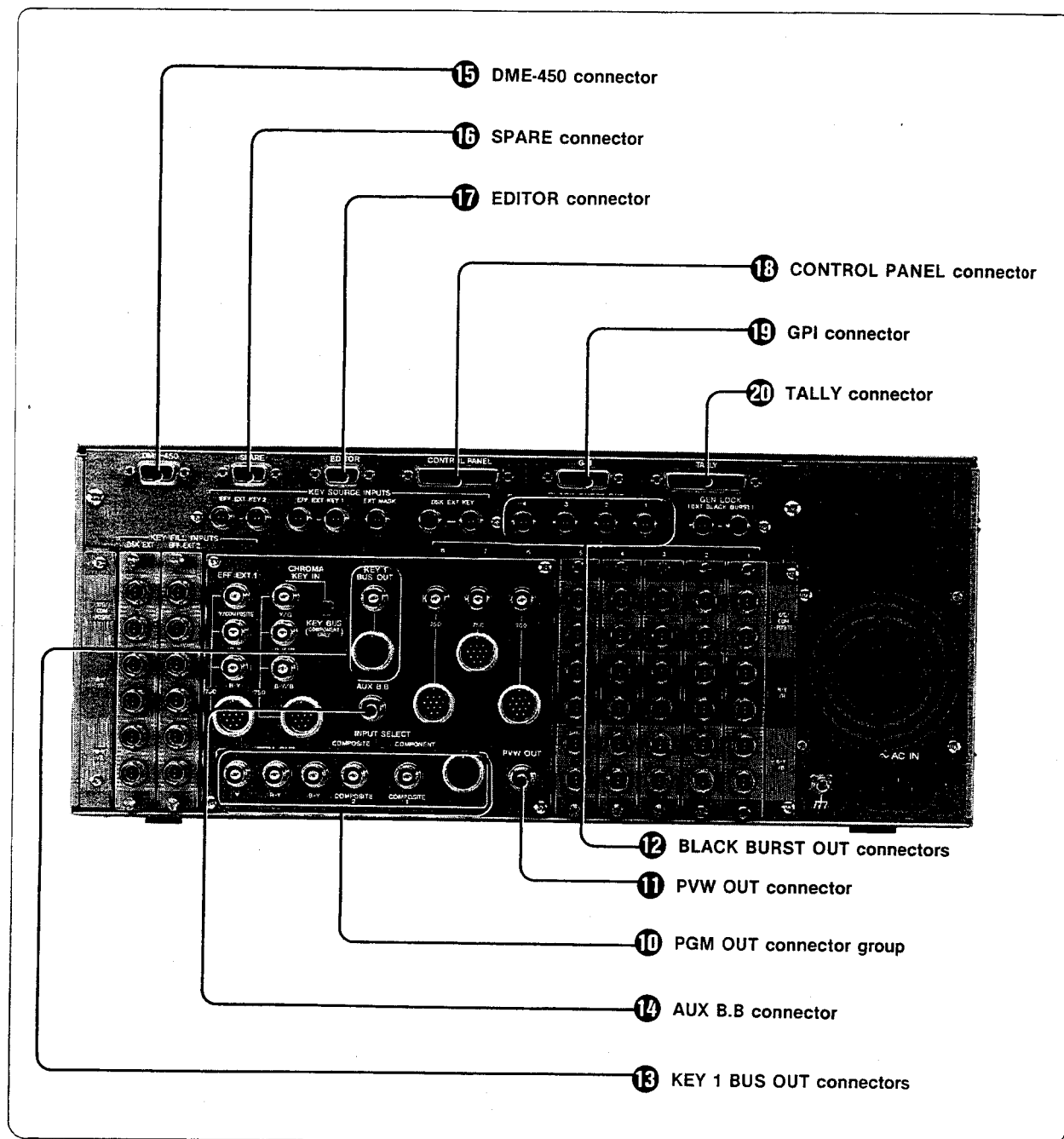
⑩ PGM OUT (program output) connector group
(BNC type and 12-pin)
Used to connect a program monitor, VTRs, or a video signal distributor. These connectors output the final product created with the video switcher.

When COMPONENT is selected with the INPUT SELECT switch:
   The Betacam-format component video signals are output from the Y/R-Y/B-Y connectors and the 12-pin connector. The encoded component signals are output from the COMPOSITE 1/2 connectors.

When COMPOSITE is selected with the INPUT SELECT switch:
   The composite video signals are output from the COMPOSITE 1/2 and the Y connectors. (Y connector is used for the composite video signal output, too). No signal is output from the 12-pin connector and the R-Y/B-Y connectors.

⑪ PVW OUT (preview output) connector (BNC type)
Used to connect a preview monitor. This connector outputs the video signal which will be output from the PGM OUT connector when the effect transition is completed. You can view the result of the transition on the monitor connected to this connector before actually executing it.
When the INPUT SELECT switch is set to COMPONENT, the encoded composite video signal is output from this connector.

⑫ BLACK BURST OUT connectors (BNC type)
Used to output the black burst signals to be supplied to the connected VTRs or cameras or the DFS-500/500P DME switcher as the reference signal for the synchronized operation of the connected equipment. By inputting an externally-generated reference signal to the GEN LOCK connector and setting the B.B EXT/INT switch on the SD19 board to EXT, these connectors output that reference signal. Otherwise, these connectors output the internally-generated black burst signal.

⑬ KEY 1 BUS OUT connectors (BNC type and 12-pin)
When setting up a composite video signal system with the DME-450 series digital multi effects or the DFS-500/500P DME switcher, connect the KEY 1 BUS OUT (BNC type) composite output connector to the VIDEO IN 1 connector on the DME-450 series or the DFS-500/500P.
When setting up a component video signal system with the DME-450 series or the DFS-500/500P, connect the KEY 1 BUS OUT (12-pin) connector to the VIDEO IN (12-pin) connector on the DME-450 series or the DFS-500/500P using an optional VDC-C5 dubbing cable. In this case, the connection to the AUX B.B OUT connector ⑭ is not necessary.

⑭ AUX B.B (auxiliary black burst) connector
(BNC type)
Connect to the VIDEO IN 3 connector on the DME-450 series digital multi effects to synchronize the DME-450 with the video switcher when setting up a composite video signal system with the DME-450 series.
To make the video phase and the hue of the DME-450's PGM OUT signal accurate, adjust the sync and subcarrier phases of the output signal of this connector using the appropriate switches and controls on the SD-20 board.

⑮ DME-450 connector (9-pin)
Connect to the SWITCHER/EDITOR connector on the DME-450 series digital multi effects or to the EDITOR connector on the DFS-500/500P DME switcher using an optional RCC-5G/10G/30G remote control cable (9-pin). This connection enables the control of the DME-450 series or the DFS-500/500P from the control panel of this unit or from an editor through the RS-422 serial interface.

⑯ SPARE connector (9-pin)
Not used.

⑰ EDITOR connector (9-pin)
Connect to an editing control unit such as the BVE-900/910, BVE-9000 or others using an optional RCC-5G/10G/30G remote control cable (9-pin). This connection enables the control of the video switcher from these editors through the RS-422 serial interface.

⑱ CONTROL PANEL connector (25-pin)
Connect to the supplied control panel using the supplied 15-pin cable (5 m, 16 ft.) or an optional 25-pin cable (30 m, 98 ft.). This connection enables the control of the video switcher from the control panel through the RS-422 serial interface.

⑲ GPI (General Purpose Interface) connector (15-pin)
To activate the automatic transitions of the AUTO TRANS, DSK MIX, FADE TO BLACK, and GPI SEL (one of the above transitions selected in the AUTO TRANSITION RATE group on the control panel), make short-circuits between the pins 1 and 2, 3 and 4, 5 and 6, and 7 and 6 of this connector. For cable connection, use the supplied 15-pin D-SUB connector plug (male).

Pin assignment of the GPI connector

Pin number	GPI input
1, 2	AUTO TRANS
3, 4	DSK MIX
5, 6	FADE TO BLACK
7, 6	GPI SEL

• The pins 2, 4, and 6 are internally connected to a common bus.
• The pins 9 through 14 are not used.

23

㉑ TALLY connector (25 pins)

Used to output the tally signals derived from eight inputs, which can be selected from the VIDEO IN 1 through 8, EFF EXT KEY 1/2, EFF EXT 1/2, DSK EXT KEY, DSK EXT, CHROMA KEY IN inputs and others. Connect to cameras or other equipment whose output is supplied to those input connectors. Assignment of input signals to tally number 1 through 8 is performed in the AUTO TRANSITION RATE group ④. The inputs to the VIDEO IN 1 through 8 connectors are assigned to tally number 1 through 8 at factory. (See "Setup.") The contact of each relay used to switch the current of the connected lamp allows a maximum of 200 mA/24 V switching.

Pin assignment of the TALLY connector

Pin number	Tally number	Factory-set input
1, 2	1	VIDEO IN 1
3, 4	2	VIDEO IN 2
5, 6	3	VIDEO IN 3
7, 8	4	VIDEO IN 4
9, 10	5	VIDEO IN 5
11, 12	6	VIDEO IN 6
15, 16	7	VIDEO IN 7
17, 18	8	VIDEO IN 8

- The pins 2, 4, 6, 8, 10, 12, 16 and 18 are internally connected to a common bus.
- The pins 14, 19, 20, 21, 22, 23, and 24 are not used.

Power Switch and Internal Boards (Main Unit)

BVS-3100/3100P/3200/3200P

SY-138 board

SD-19 board ⑥ ⑦

WP-27 board

SD-20 board ❸❹❺

❶ ❷ ❽❾⑩ ⑪⑫⑬ ⑭⑮⑯⑰⑱⑲⑳㉑ ㉒㉓

WP-27

SY-138

SD-19

SD-20

EF-20

㉔ ㉕㉖㉗ ㉘㉙㉚ ㉛㉜㉝㉞ ㉟

EF-20 board

VR: Variable Resistor. / CV: Variable Capacitor.
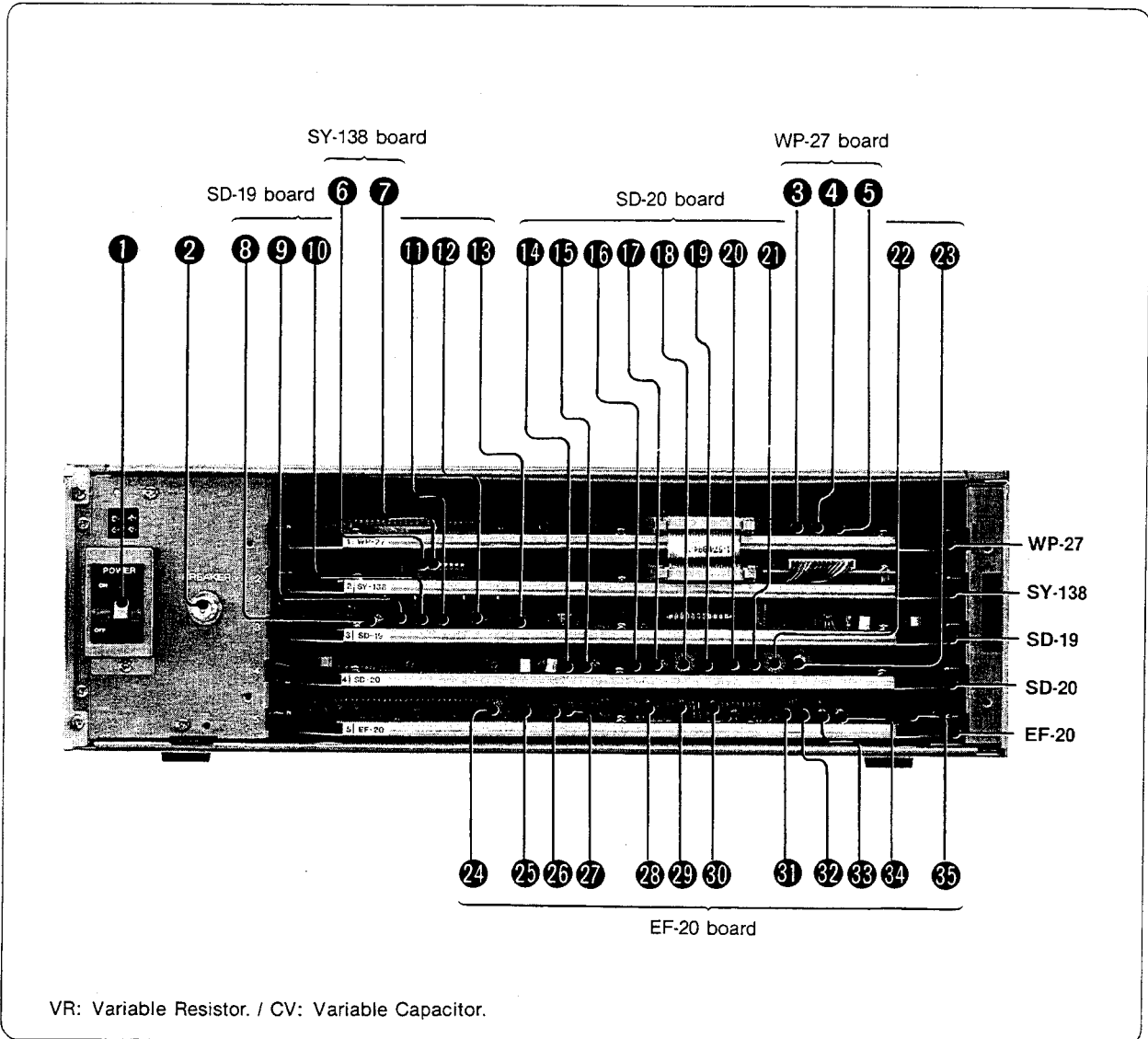
❶ **POWER switch**
Press the ON side to turn the power on, and the lamp above the switch lights up. The buttons on the control panel are set to the initial status, which is shown by the lighting of some buttons. Press the OFF side to turn the power off.

❷ **BREAKER button**
The breaker for the primary AC power circuit. When excessive current flows, this breaker cuts the power off and the BREAKER button pops out. In this case, press the POWER switch to OFF, check and repair the unit and push in the BREAKER button.
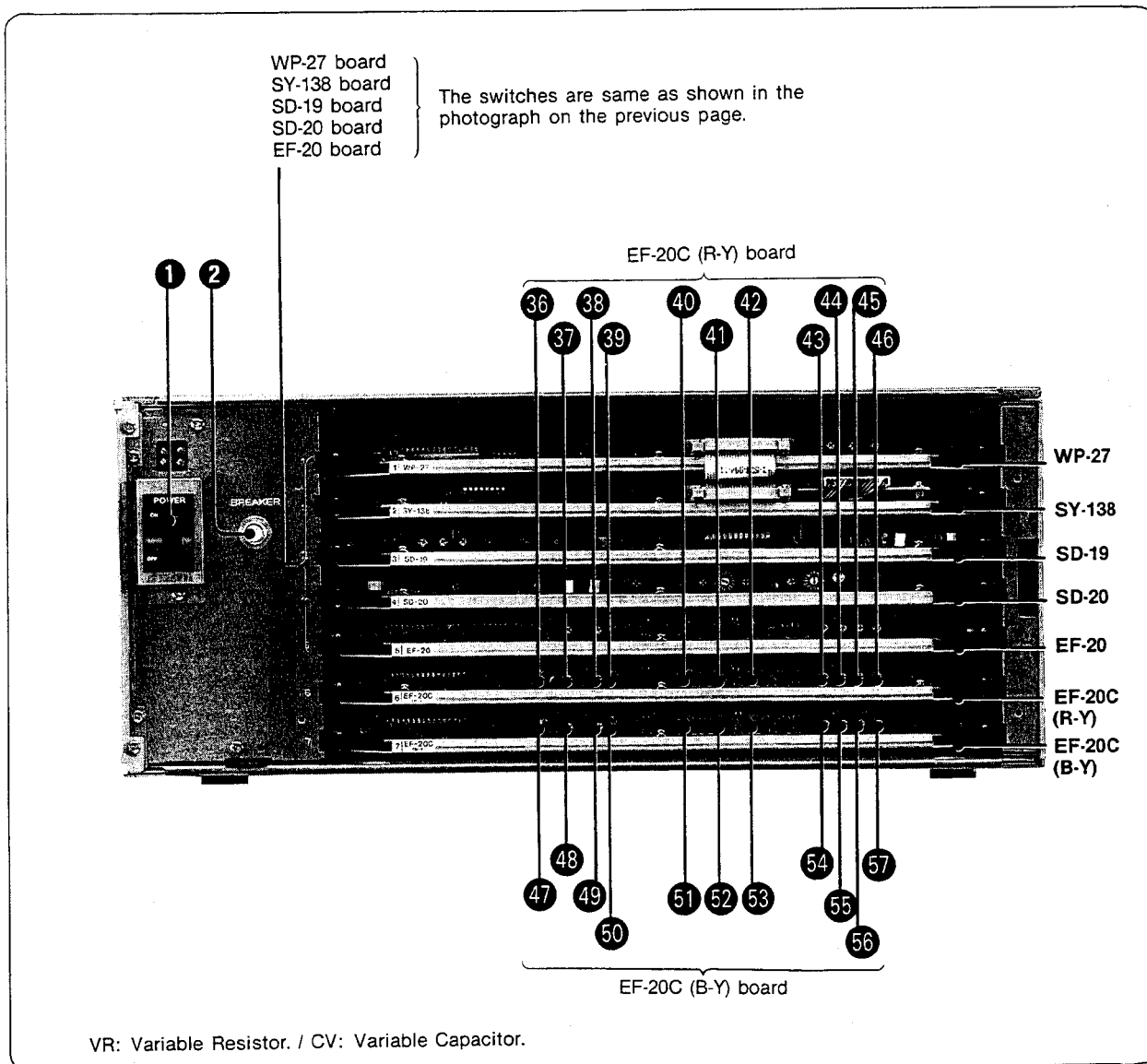
| WP-27 board |

❸ **CIRCLE H VR**
Used to adjust the horizontal size of the circle pattern (No. 24).

❹ **CIRCLE V VR**
Used to adjust the vertical size of the circle pattern (No. 24).

❺ **CIRCLE ASPECT VR**
Used to adjust aspect ratio of the circle pattern (No. 24).

WP-27 board
SY-138 board
SD-19 board
SD-20 board
EF-20 board

The switches are same as shown in the photograph on the previous page.

EF-20C (R-Y) board

① **②**

36 38 40 42 44 45
37 39 41 43 46

WP-27
SY-138
SD-19
SD-20
EF-20
EF-20C (R-Y)
EF-20C (B-Y)

48
47 49 51 52 53 54 57
50 55
56

EF-20C (B-Y) board

VR: Variable Resistor. / CV: Variable Capacitor.

SY-138 board

⑥ **RESET switch**
Used to reset the system control microprocessor.
NORM (up): Usually set to this position. (The system is automatically reset when the powered switch is on.)
RESET (down): Set to this position to manually reset system. After the reset, return the switch to NORM.

⑦ **CRK. P switch (BVS-3200C/3200CP only)**
Used to switch the system controller mode depending on the chroma key source signal to be used when the BVS-3200C/3200CP is operated in the component mode.
CRK. P: Set to this position when the chroma key source signal is selected from the primary input signals.
NORM: Set to this position when the chroma key source signal is input from the CHROMA KEY IN connector. (Factory presetting)

Note

To enable selecting the chroma key source from the primary input signal, set the CHROMA KEY IN switch on the connector panel to KEY BUS. (For details of the chroma key signal settings, see page 48.)

SD-19 board

⑧ B.B (black burst) GAIN VR

Used to adjust the level of the signals output from the BLACK BURST OUT 1/2/3/4 connectors within a range of ±3 dB.

⑨ SYNC LEVEL VR

Used to adjusts the level of the sync signal output from the PGM PUT and the BLACK BURST OUT connectors within a range of ±3 dB. This VR is deactivated when the B.B EXT/INT switch ⑬ is set to EXT.

⑩ BURST LEVEL VR

Used to adjust the color burst level of the signals output from the PGM OUT and the BLACK BURST OUT connectors within a range of ±3 dB.
This VR is deactivated when the B.B EXT/INT switch ⑬ is set to EXT.

⑪ SET UP ON/OFF switch

Used to select the setup level of the color black signal used for the primary input, color background, the effect key mattes, the downstream key matte, and the fade-to-black effect, and the setup level of the output black burst signal. The switch is factory-set to ON.
For the switch setting, see the following table. (The BVS-3100P/3200P/3200CP does not have this switch.)

⑫ SYNC REPLACEMENT ON/OFF switch

Used to select whether or not to replace the blanking period of the output signals of the PGM OUT connectors.
ON: to be replaced with the blanking period of the black burst signal selected with the B.B EXT/INT switch.
(When the component video signal is used with BVS-3200C/3200CP, the blanking period is replaced with that of the internally generated black burst signal regardless of the setting of the B.B EXT/INT switch.)
OFF: not to be replaced and remain same as the blanking period of the VIDEO IN input signals.
The switch is factory-set to ON. For the switch setting, see the following table.

⑬ B.B EXT/INT (black burst external/internal) switch

Used to select the black burst signal which is added to the output of the PGM OUT connector and is used as the output black burst signal and as the color black signal for the fade to black effect.
EXT: The black burst is deprived from the input signal of the GEN LOCK connector. Be sure to input a black burst to the GEN LOCK connector when this position is selected.
INT: The black burst is deprived from the internal sync signal generator.
When the SYNC REPLACEMENT ON/OFF switch is set to ON, the blanking period of the output signals of PGM OUT connectors is replaced with the one of the color black signal that is selected with this switch. (When the component video signal is used with BVS-3200C/3200CP, the blanking period is replaced with that of the internally generated black burst signal regardless of the setting of the B.B EXT/INT switch.) The switch is factory-set to INT.
For the switch setting, see the following table.

28

Settings of the SET UP ON/OFF, SYNC REPLACEMENT ON/OFF, and B.B EXT/INT switches

These switches are to be used together. The table below shows the settings to be made.

Switch setting / Settings to be made		SYNC REPLACEMENT switch							
		ON				OFF			
		B.B. EXT/INT switch				B.B EXT/INT switch			
		EXT		INT		EXT		INT	
		SET UP switch		SET UP switch		SET UP switch		SET UP switch	
		ON	OFF	ON	OFF	ON	OFF	ON	OFF
Set up level (IRE)	COLOR BLACK for primary crosspoint buses	7.5	0	7.5	0	7.5	0	7.5	0
	COLOR BLACK for FADE TO BLACK	Same as GEN LOCK input		7.5	0	Same as GEN LOCK input		7.5	0
	BLACK BURST OUT 1/2/3/4	Same as GEN LOCK input				Same as GEN LOCK input			
Sync/ burst	PGM OUT	Same as GEN LOCK input		Internal sync generator		Same as VIDEO IN input			
	PVW OUT	Same as VIDEO IN input							

SD-20 board

⓵⓸ CRK (chroma key) R-Y, B-Y/RGB switch
Used to select the format of the chroma key signal, Y/R-Y/B-Y or RGB. The switch is factory-set to R-Y, B-Y.

⓵⓹ DSK BORDER LUM VR
Used to adjust the luminance level of the signal used for the border lilne and drop shadow of the downstream key.

⓵⓺ SYNC GEN LOCK SC-PHASE 0°/180° switch
Used to reverse the phase of the subcarrier generated by the internal sync generator with respect to that of the reference signal input to the GEN LOCK connector.
Set this switch to 0° or 180° when the phase cannot be properly adjusted using the SC-PHASE FINE VR ⓵⓻.

⓵⓻ SYNC GEN LOCK SC-PHASE FINE VR
Used for fine adjustment of the phase of the subcarrier generated by the internal sync generator with respect to that of the reference signal input to the GEN LOCK connector.

⓵⓼ SYNC GEN LOCK H-PHASE COARSE switch
Used for coarce adjustment of the phase of the H sync generated by the internal sync generator with respect to that of the reference signal input to the GEN LOCK connector. This rotary switch adjusts the phase in 16 steps. Changing the switch by one position shifts the phase approximately 280 ns for the NTSC model (226 ns for the PAL model).

⓵⓽ SYNC GEN LOCK H-PHASE FINE VR
Used for fine adjustment of the phase of the H sync generated by the internal sync generator with respect to that of the reference signal input to the GEN LOCK connector.

⓶⓪ AUX B.B SC-PHASE 0°/180° switch
Used to reverse the phase of the subcarrier of the reference signal which is output from the AUX B.B connector and supplied to the DME-450 series digital multi effects.
Set this switch to 0° or 180° when the phase cannot be properly adjusted using the SC-PHASE FINE VR ⓶⓵.

⓶⓵ AUX B.B SC-PHASE FINE VR
Used for fine adjustment of the phase of subcarrier of the reference signal which is output from the AUX B.B connector and supplied to the DME-450 series digital multi effects.

⓶⓶ AUX B.B H-PHASE COARSE switch
Used for coarse adjustment of the phase of the H sync of the reference signal which is output from the AUX B.B connector and supplied to the DME-450 series digital multi effects. This rotary switch adjusts the phase in 16 steps. Changing the switch by one position shifts the phase approximately 70 ns for the NTSC model (58 ns for the PAL model).

⓶⓷ AUX B.B H-PHASE FINE VR
Used for fine adjustment of the phase of the H sync of the reference signal which is output from the AUX B.B connector and supplied to the DME-450 series digital multi effects.

29

EF-20 board

㉔ PVW FRQ (Y/COMPOSITE) CV
Used to adjust the frequency response of the preset background signal (Y or composite video) output from the PVW OUT connector.

㉕ PVW GAIN (Y/COMPOSITE) VR
Used to adjust the level of the preset background signal (Y or composite video) output from the PVW OUT connector.

㉖ PGM GAIN (Y/COMPOSITE) VR
Used to adjust the level of the program background signal (Y or composite video) output from the PGM OUT connector.

㉗ PGM FRQ (Y/COMPOSITE) CV
Used to adjust the frequency response of the program background signal (Y or composite video) output from the PGM OUT connector.

㉘ PST FRQ (Y/COMPOSITE) CV
Used to adjust the frequency response of the preset background signal (Y or composite video) output from the PGM OUT connector.

㉙ KEY UNDER FRQ (Y/COMPOSITE) CV
Used to adjust the frequency response of the underlaid key fill signal (Y or composite video).

㉚ KEY OVER FRQ (Y/COMPOSITE) CV
.Used to adjust the frequency response of the overlaid key fill signal (Y or composite video).

㉛ PST DC (Y/COMPOSITE) VR
Used to match the DC level of the preset background signal (Y or composite video) to that of the program background signal (Y or composite) which is output from the PGM OUT connector.

㉜ KEY UNDER DC (Y/COMPOSITE) VR
Used to match the DC level of the underlaid key fill signal (Y or composite video) to that of the program background signal (Y or composite) which is output from the PGM OUT connector.

㉝ KEY OVER DC (Y/COMPOSITE) VR
Used to match the DC level of the overlaid key fill signal (Y or composite video) to that of the program background signal (Y or composite) which is output from the PGM OUT connector.

㉞ BLANKING DC (Y/COMPOSITE) VR
Used to adjust the blanking level of the output signal (Y or composite video) of the PGM OUT connector.

㉟ B. B PHASE (Y/COMPOSITE) VR
Used to adjust the phase of the internal black burst signal (that is newly added by setting the SYNC REPLACEMENT ON/OFF to ON and the B. B EXT/INT to INT) with respect to the phase of the PGM OUT signal (composite video).

EF-20C (R-Y) board (BVS-3200C/3200CP only)

The CVs and VRs on this board are effective only when the INPUT SELECT switch on the connector panel is set to COMPONENT.

㊱ PVW FRQ (R-Y) CV
Used to adjust the frequency response of the preset background signal (R-Y) output from the PVW OUT connector.

㊲ PVW GAIN (R-Y) VR
Used to adjust the level of the preset background signal (R-Y) output from the PVW OUT connector.

㊳ PGM GAIN (R-Y) VR
Used to adjust the level of the program background signal (R-Y) output from the PGM OUT connector.

㊴ PGM FRQ (R-Y) CV
Used to adjust the frequency response of the program background signal (R-Y) output from the PGM OUT connector.

㊵ PST FRQ (R-Y) CV
Used to adjust the frequency response of the preset background signal (R-Y) output from the PGM OUT connector.

㊶ KEY UNDER FRQ (R-Y) CV
Used to adjust the frequency response of the underlaid key fill signal (R-Y).

㊷ KEY OVER FRQ (R-Y) CV
Used to adjust the frequency response of the overlaid key fill signal (R-Y).

㊸ PST DC (R-Y) VR
Used to match the DC level of the preset background signal (R-Y) to that of the program background signal (R-Y) which is output from the PGM OUT connector.

㊹ KEY UNDER DC (R-Y) VR
Used to match the DC level of the underlaid key fill signal (R-Y) to that of the program background signal (R-Y) which is output from the PGM OUT connector.

30

45 KEY OVER DC (R-Y) VR
Used to match the DC level of the overlaid key fill siganl (R-Y) to that of the program background signal (R-Y) which is output from the PGM OUT connector.

46 BLANKING DC (R-Y) VR
Used to adjust the blanking level of the output signal (R-Y) of the PGM OUT connector. This VR is effective regardless of the SYNC REPLACEMENT ON/OFF switch setting when the INPUT SELECT switch is set to COMPONENT.

EF-20C (B-Y) board (BVS-3200C/3200CP only)

The CVs and VRs on this board are effective only when the INPUT SELECT switch on the connector panel is set to COMPONENT.

47 PVW FRQ (B-Y) CV
Used to adjust the frequency response of the preset background signal (B-Y) output from the PVM OUT connector.

48 PVW GAIN (B-Y) VR
Used to adjust the level of the preset background signal (B-Y) output from the PVW OUT connector.

49 PGM GAIN (B-Y) VR
Used to adjust the level of the program background signal (B-Y) output from the PGM OUT connector.

50 PGM FRQ (B-Y) CV
Used to adjust the frequency response of the program background signal (B-Y) output from the PGM OUT connector.

51 PST FRQ (B-Y) CV
Used to adjust the frequency response of the preset background signal (B-Y) output from the PGM OUT connector.

52 KEY UNDER FRQ (B-Y) CV
Used to adjust the frequency response of the underlaid key fill signal (B-Y).

53 KEY OVER FRQ (B-Y) CV
Used to adjust the frequency response of the overlaid key fill signal (B-Y).

54 PST DC (B-Y) VR
Used to match the DC level of the preset background signal (B-Y) to that of the program background signal (B-Y) which is output from the PGM OUT connector.

55 KEY UNDER DC (B-Y) VR
Used to match the DC level of the underlaid key fill signal (B-Y) to that of the program background signal (B-Y) which is output from the PGM OUT connector.
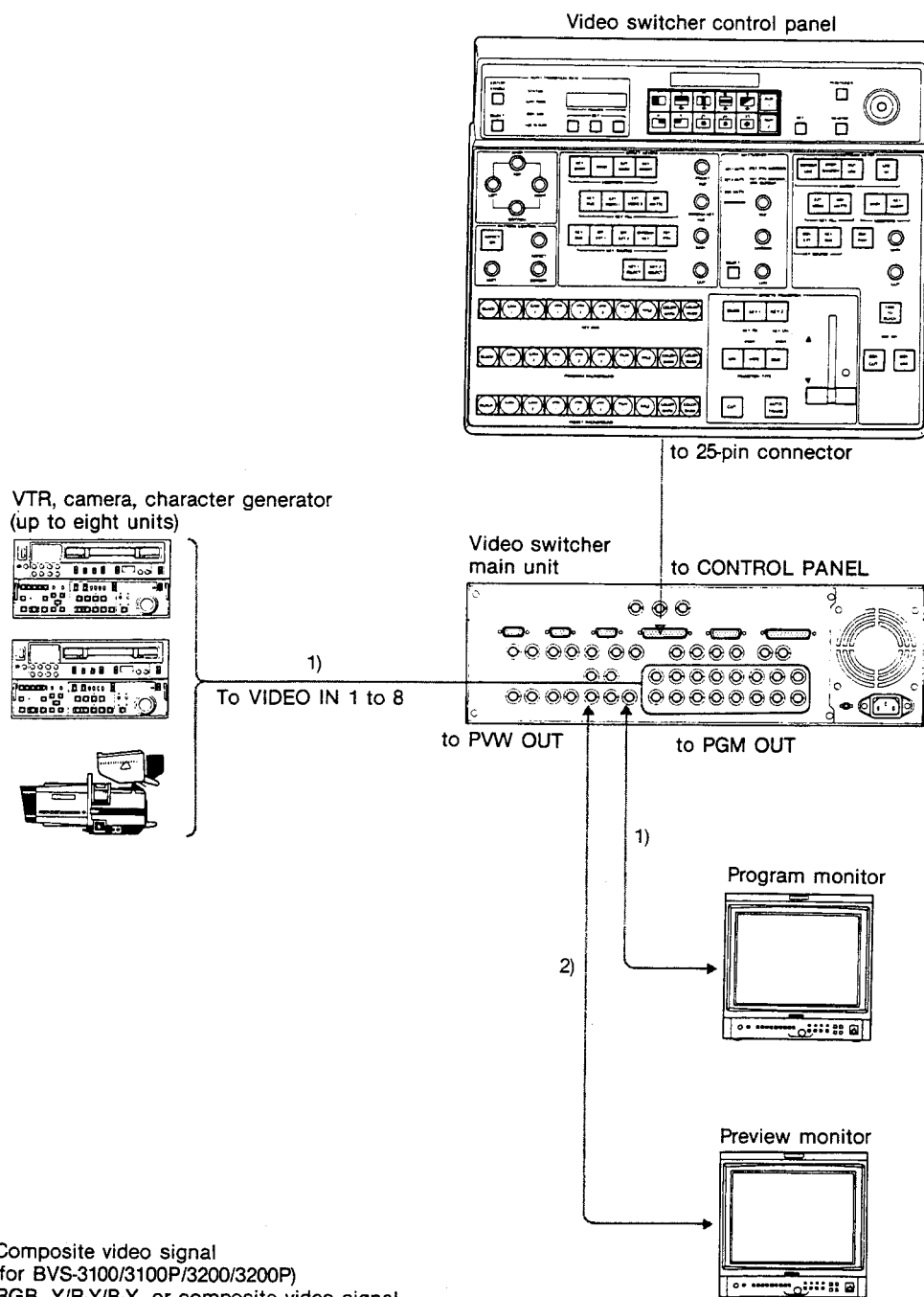
56 KEY OVER DC (B-Y) VR
Used to match the DC level of the overlaid key fill signal (B-Y) to that of the program background signal (B-Y) which is output from the PGM OUT connector.

57 BLANKING DC (B-Y) VR
Used to adjust the blanking level of the output signal (B-Y) of the PGM OUT connector. This VR is effective regardless of the SYNC REPLACEMENT ON/OFF switch setting when the INPUT SELECT switch is set to COMPONENT.

Connection of the Primary Inputs and Video Monitors

Video switcher control panel

to 25-pin connector

VTR, camera, character generator
(up to eight units)

Video switcher
main unit

to CONTROL PANEL

1)

To VIDEO IN 1 to 8

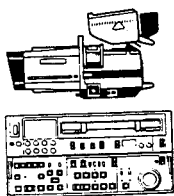to PVW OUT

to PGM OUT

1)

Program monitor

2)

Preview monitor

1) • Composite video signal
(for BVS-3100/3100P/3200/3200P)
• RGB, Y/R-Y/B-Y, or composite video signal
(for BVS-3200C/3200CP)
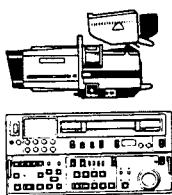2) Composite video signal

Connection of External Key Sources/Fills

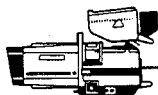**Effect key sources**
Camera, character generator (up to two units)

Chroma key source/fill
Camera, VTR

to EFF EXT KEY 1/2

Chroma key source
(Component signal)

Chroma key fill

BVS-3000 series
video switcher

to CHROMA KEY IN

Effect key fills
Camera, VTRs (up to two units)

to EFF EXT 1/2

to DSK EXT KEY

Downstrean key source
Camera, character generatoı

Key mask sources
Camera
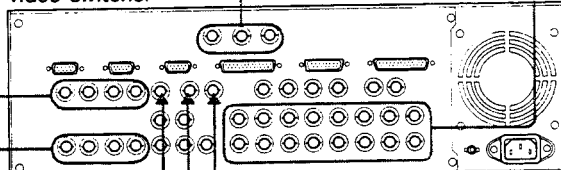
to EXT MASK

to DSK EXT VIDEO IN
or DSK EXT

Downstream key fill
Camera, VTR
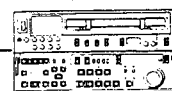
Note on chroma key signals
This illustration shows an example when the BVS-3000 series is used in the composite mode.
When the BVS-3200C/3200CP is used in the component mode, the component signals that are
input to the primary input (VIDEO IN) connector can be used for the chroma key source and fill
signals. To activate this function, set the CHROMA KEY IN switch, located beside the CHROMA
KEY IN connector, to KEY BUS side. (For details of the chroma key signal settings, see page 48.)

Connection with the DME-450 Digital Multi Effects

BVS-3000 series
video switcher
control panel

BVS-3000 series   5)
video switcher
main unit

from AUX B.B.   to KEY FILL INPUTS
                                        EFF EXT 1/2
from KEY 1 BUS OUT   to KEY SOURCE INPUTS
                                        EFF EXT KEY 1/2

                        to DME-450

2)   3)   4)   1)   3)
*   DME-450 series
                digital multi effect
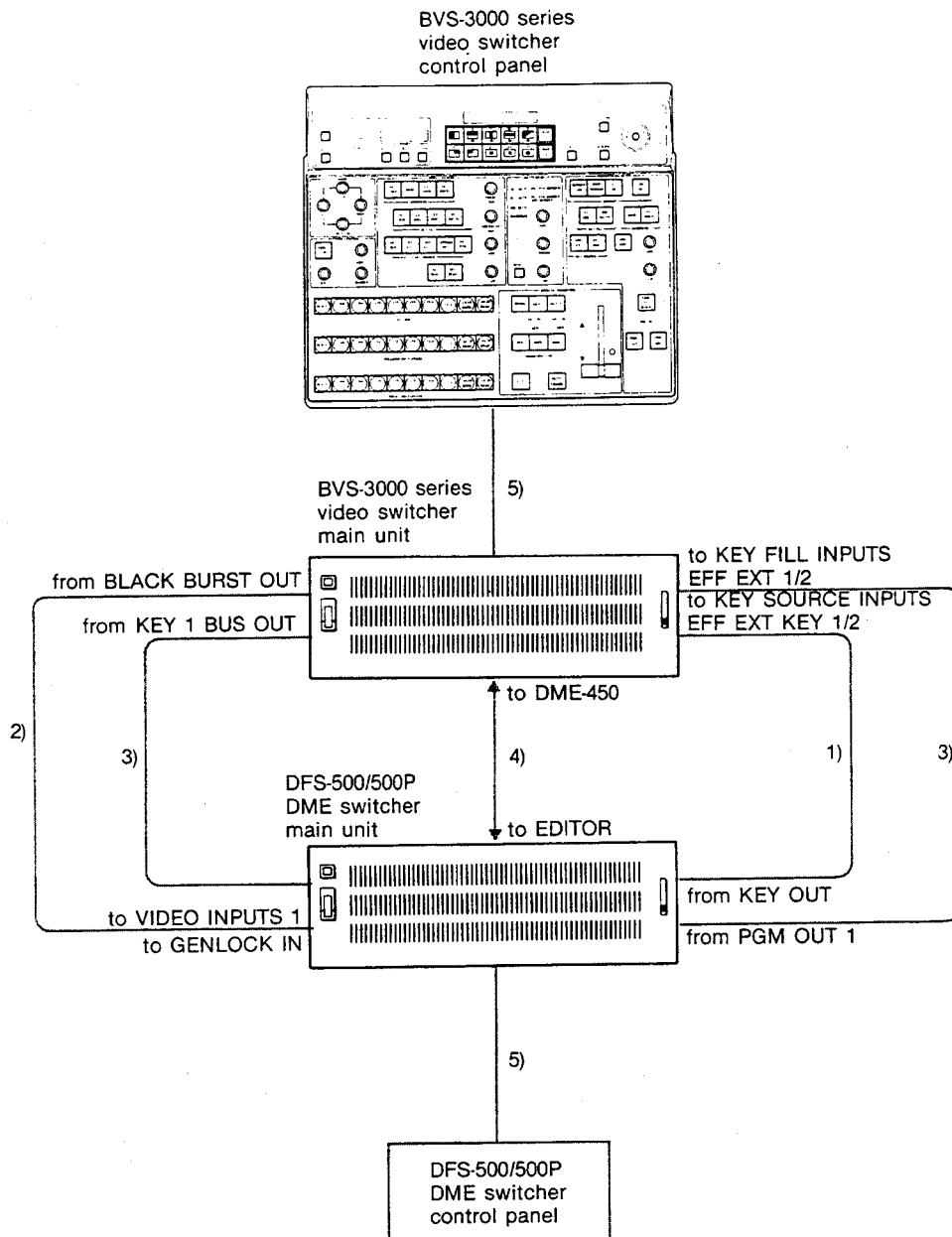   main unit   to SWITCHER/EDITOR

to VIDEO IN 1   from KEY OUT
or VIDEO IN (12-pin)
to VIDEO IN 3   from PGM OUT
                                        or VIDEO OUT (12-pin)

                        5)

                DME-450 series
                digital multi effects
                control panel

On the DME-450 series setting
- To use the DME-450 series with the BVS-3000 series,
  set the unit selector in the DME-450 series to
  BVS-3000.
- To set up the system in the component mode, set
  the COMPOSITE/COMPONENT switch in the
  DME-450 series to COMPONENT.

1): Key signal (75-ohm coaxial cable)
2): Black burst (75-ohm coaxial cable)
3): • Composite video signal (75-ohm coaxial cable)
      (for BVS-3100/3100P/3200/3200P)
    • Y/R-Y/B-Y (12-pin cable) or Composite video signal
      (for BVS-3200C/3200CP)
4): 9-pin remote cable RG-5G/10G/30G
5): Cable supplied with each unit
*: This connection is not necessary when
    using component video signal with
    the BVS-3200C/3200CP.

34

Connection with the DFS-500 DME switcher

BVS-3000 series
video switcher
control panel

BVS-3000 series   5)
video switcher
main unit

to KEY FILL INPUTS
EFF EXT 1/2

from BLACK BURST OUT

to KEY SOURCE INPUTS
EFF EXT KEY 1/2

from KEY 1 BUS OUT

to DME-450

2)   3)   4)   1)   3)

DFS-500/500P
DME switcher
main unit   to EDITOR

from KEY OUT

to VIDEO INPUTS 1

from PGM OUT 1

to GENLOCK IN

5)

DFS-500/500P
DME switcher
control panel

On the DFS-500 Setting
• To use the DFS-500/500P with the BVS-3000 series,
  set the controller select switch on the SY-172 board
  of the DFS-500/500P to BVS-3000, and turn the
  power off and then turn it back on.
• Set the IN 1 through 4 switches on the AD-76 board
  of the DFS-500 according to the format of the video
  signal used in the system.

1): Key signal (75-ohm coaxial cable)
2): Black burst (75-ohm coaxial cable)
3): • Composite video signal (75-ohm coaxial cable)
      (for BVS-3100/3100P/3200/3200P)
    • Y/R-Y/B-Y (12-pin cable) or Composite video signal
      (for BVS-3200C/3200CP)
4): 9-pin remote cable RG-5G/10G/30G
5): Cable supplied with each unit

Connection for the Editing Application
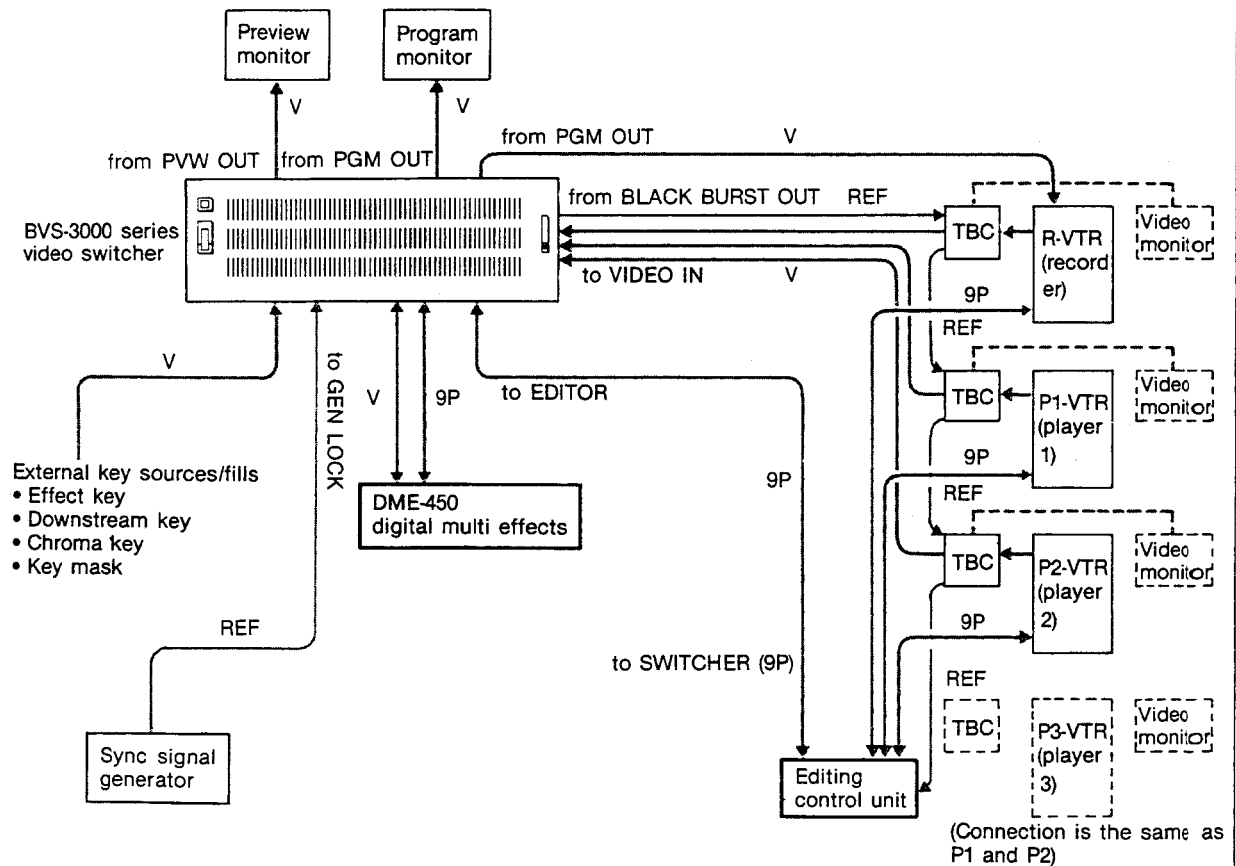
- REF: Reference video signal
- V: Video signal
- 9P: Control signal through 9-pin serial interface
- For the connections of audio signals, refer to the operation manual of the editing control unit.
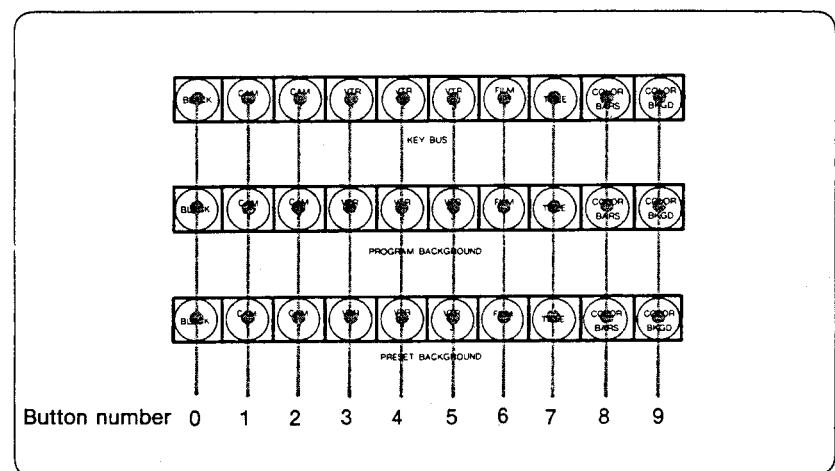
Crosspoint Assignment

The primary inputs (input signals at the VIDEO IN 1 through 8 connectors, and the internally-generated color black and color background) can be assigned to any button in the primary crosspoint buses group.
You do not need to change the cable connections for the signal assignment change. Changes of the signal assignment to the buttons can be made on the control panel.
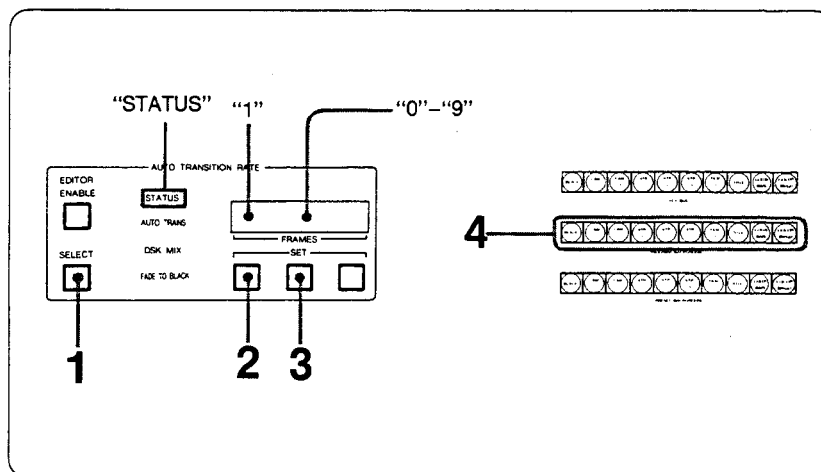
Crosspoint buses group

The primary inputs have their own signal numbers and are assigned to the buttons as follows at factory.

Input	Signal number
Color black	0
Signals to VIDEO IN 1–8	1–8
Color background	9

A change in the crosspoint assignment is made by assigning the desired signal number to the desired button.

To change the signal assignment

1 Select the STATUS mode by pressing the SELECT button until a beep sounds in the AUTO TRANSITION RATE group.

2 Set to the crosspoint assignment mode by selecting "1" with the left button in the SET buttons row.

3 Press the center button in the SET buttons row to display the number (0-9) of the primary input signal whose assignment is to be changed in the center of the FRAMES display.
The button to which the signal is currently assigned lights up in the PROGRAM BACKGROUND bus of the primary crosspoint buses group.

4 Select the button to which the signal is to be assigned in the PROGRAM BACKGROUND bus and hold it down longer than half a second.
A beep sounds and the selected button lights.

5 Repeat steps 3 and 4 to change the assignment of other signals.

Note
You can assign only one signal to one button. Under the factory-preset conditions, for example, reassign signal 1 from button 1 to button 8, then signal 8 will be automatically assigned to button 1.

Tally Signal Assignment

The TALLY connector (25-pin) is used to output the tally signals associated with the specific input signals when those input signals are output as program pictures from the PGM OUT connectors.

The pin assignment of the TALLY connector is as follows:

Pin number	Tally-number	Associated input (factory setting)
1, 2	1	VIDEO IN 1
3, 4	2	VIDEO IN 2
5, 6	3	VIDEO IN 3
7, 8	4	VIDEO IN 4
9, 10	5	VIDEO IN 5
11, 12	6	VIDEO IN 6
15, 16	7	VIDEO IN 7
17, 18	8	VIDEO IN 8

Each of tally 1 through 8 can be assigned to any signal of the following input connectors (or buttons) using the buttons corresponding to those inputs.

Input connector	Corresponding button
VIDEO IN 1 through 8	Buttons in the primary crosspoint buses (Signal assignment to the buttons are optional.)
KEY SOURCE INPUTS EFF EXT KEY 1 and 2	EFF KEY 1 and EFF KEY 2 in the EFFECT KEYERS group
KEY FILL INPUTS EFF EXT 1 and 2	EXT VIDEO 1 and EXT VIDEO 2 in the EFFECT KEYERS group
DSK EXT KEY	DSK EXT in the DOWNSTREAM KEYER group
DSK EXT VIDEO IN	EXT VIDEO in the DOWNSTREAM KEYER group
CHROMA KEY IN	CHROMA KEY in the EFFECT KEYERS group
EXT MASK IN	EXT MASK for MODIFIERS in the EFFECT KEYERS group

Other buttons	PST PTN for KEY SOURCE
	EFF MATTE for KEY FILL
	  (in the EFFECT KEYERS group)
	DSK MATTE for KEY FILL
	FADE TO BLACK
	DSK MIX
	  (in the DOWNSTREAM KEYER group)
	AUTO TRANS
	  (in the EFFECTS TRANSITION group)

To change the tally signal assignment

1 Select the STATUS mode by pressing the SELECT button until a beep sounds in the AUTO TRANSITION RATE group.

2 Press the left button of the SET buttons row to display "2" (tally assignment mode) in the left of the FRAMES display.

3 Press the center button of the SET buttons row to display the tally number ("1" through "8") whose assignment will be changed.
The button corresponding to the input signal to which the selected tally number is currently assigned lights up.

4 For half a second or longer hold down the button corresponding to the input signal to which the selected tally number is to be assigned.
A beep sounds and the selected button lights.

5 Repeat steps 3 and 4 to change the assignment of other tally number.

Relation of the primary inputs in the crosspoint buses to the tally signal

The relation of the primary input signals to the tally signals does not change even if the signal assignment in the crosspoint buses group is changed. For example, if the input signal of the VIDEO IN 1 connector is newly assigned to the button 8 using the crosspoint assignment function, the tally signal 1 will be activated when you select the VIDEO IN 1 signal with the button 8 to be output from the PGM OUTPUT connector.

Resetting the Values of the GAIN and CLIP Controls

You can reset the values of the GAIN and CLIP controls in the EFFECT KEYERS group or the DOWNSTREAM KEYER group corresponding to the selected key source. The value of the GAIN control is reset to "0" (unity gain) and the value of the CLIP control is reset to the middle level.

1 Press the SELECT button until a beep sounds.
This lights the STATUS indicator of the AUTO TRANSITION RATE group [4].

2 Press the left button of the SET buttons row to display "3" in the left of the FRAMES display.

3 Press the right button of the SET buttons row to display "2" in the right of the FRAMES display.

4 Press the CUT button of the EFFECTS TRANSITION group [7].
A beep sounds and the FRAMES display shows "312".
Pressing the CUT button turns reset mode on/off.

5 Press one of the buttons for KEY SOURCE, other than the PST PTN button in the EFFECT KEYERS group [2] or a button of the DOWNSTREAM KEYER group [6], until a beep sounds.
The value of the GAIN control is reset to "0" (unity gain) and the value of the CLIP control is reset to the middle level of the control corresponding to the selected key source.

Notes
• The unit resets the values corresponding to the selected key source. When the KEY BUS button, among the buttons for the KEY SOURCE, is pressed, the unit resets the values selected with the KEY BUS buttons in the primary crosspoint buses group.
• In the EFFECT KEYERS group, the values of the GAIN and CLIP controls of KEY 1 are the same as those of KEY 2. In the DOWNSTREAM KEYER group, the GAIN and CLIP values are reset independently of those for KEY 1 and 2. After resetting the values, set the values using the GAIN and CLIP controls as necessary.
• You can save the reset values as a snapshot, but you cannot save the reset mode on/off status. The setting of the reset mode is cleared to off as the initial setting when the power is turned off.

DME-450/DFS-500 Automatic Key Setting

When used in combination with the DME-450 series or the DFS-500/500P, the BVS-3000 series uses the DME-450/DFS-500's effects as the key source. Under the factory-preset conditions, when an effect of the DME-450 series or the DFS-500/500P is selected, the key processor of the BVS-3000 series is automatically set as follows:

- Key processor: KEY 1
- Key fill: EXT VIDEO 1
- Key source: EFF EXT 1
- Key on/off: on

You can change this presetting. Options are as follows:

- Key processor: KEY 1/KEY 2/DOWNSTREAM KEYER (DSK)
- Key fill: EXT VIDEO 1/EXT VIDEO 2/EXT VIDEO (DSK)
- Key source: EFF EXT 1/EFF EXT 2/DSK EXT (DSK)
- Key on/off: on/off

Change the setting following the examples below.

Setting for the KEY 1 processor
(Key fill: EXT VIDEO 2, Key source: EFF EXT 2)

1 Press the SELECT button until a beep sounds to light up STATUS indicator in the AUTO TRANSITION RATE group ④.

2 Display "301" in the FRAMES display using the SET buttons.

3 Make sure that the KEY 1 SELECT button is lit in the EFFECT KEYERS group ②.

4 Press the EXT VIDEO 2 button for KEY FILL to light it up in the EFFECT KEYERS group ②.

5 Press the EFF EXT 2 button for KEY SOURCE to light it up in the EFFECT KEYERS group ②.

6 Press the KEY 1 button to light it up in the EFFECTS TRANSITION group ⑦.

7 While holding down the KEY 1 SELECT button in the EFFECT KEYERS group ②, press the CUT button in the EFFECTS TRANSITION group ⑦ to light up the KEY ON lamp.

8 Press the CUT button in the EFFECTS TRANSITION group ⑦. A beep sounds and the FRAMES display shows "311" to indicate the setting is completed.

Releasing the KEY 1 processor setting

1 Press the SELECT button until a beep sounds to light up STATUS indicator in the AUTO TRANSITION RATE group ⑷.

2 Display "301" in the FRAMES display using the SET buttons.

3 Press the KEY 1 button to turn it off in the EFFECTS TRANSITION group ⑺.

4 While holding down the KEY 1 SELECT button in the EFFECT KEYERS group ⑵, press the CUT button in the EFFECTS TRANSITION group ⑺ to turn off the KEY ON lamp.

5 Press the CUT button in the EFFECTS TRANSITION group ⑺. A beep sounds and the FRAMES display shows "311" to indicate the setting is completed.

Setting for the DOWNSTREAM KEYER

1 Press the SELECT button until a beep sounds to light up STATUS indicator in the AUTO TRANSITION RATE group ⑷.

2 Display "301" in the FRAMES display using the SET buttons.

3 Press the EXT VIDEO button for KEY FILL to light it up in the DOWNSTREAM KEYER group ⑹.

4 Press the DSK EXT button for KEY SOURCE to light it up in the DOWNSTREAM KEYER group ⑹.

5 Press the DSK CUT button to light up the DSK ON indicator in the DOWNSTREAM KEYER group ⑹.

6 Press the DSK PVW button to light it up in the DOWNSTREAM KEYER group ⑹.

7 Press the CUT button in the EFFECTS TRANSITION group ⑺. A beep sounds and the FRAMES display shows "311" to indicate the setting is completed.

Releasing the DOWNSTREAM KEYER setting

1 Press the SELECT button until a beep sounds to light up STATUS indicator in the AUTO TRANSITION RATE group 4.

2 Display "301" in the FRAMES display using the SET buttons.

3 Press the DSK PVW button to turn it off in the DOWNSTREAM KEYER group 6.

4 Press the DSK CUT button to turn off the DSK ON indicator in the DOWNSTREAM KEYER group 6.

5 Press the CUT button in the EFFECTS TRANSITION group 7. A beep sounds and the FRAMES display shows "311" to indicate the setting is completed.

Notes
- The key settings for the DME-450 series or the DFS-500/500P are retained in the snapshot memory for about a month. If a month has passed or if the system is manually reset, the memory returns to the factory-preset conditions.
- The title superimpose function of the DME-450 series or the DFS-500/500P can be switched on and off using the CLIP control of the key processor that is selected for the DME-450 series or the DFS-500/500P automatic key settings. (See the operator's guide for the operations.)
- When using an effect of the DME-450 series or the DFS-500/500P, select the effected picture (sent to the DME-450 series or the DFS-500/500P) in the KEY BUS of the KEY 1 processor. This is true even if the KEY 2 processor or the DOWNSTREAM KEYER is selected for DME-450 series or the DFS-500/500P automatic key settings. (See the operator's guide for the operations.)
- The video switcher is supplied with a card showing the STATUS mode settings including the DME-450 series or the DFS-500/500P automatic key settings. Use it for quick reference.

Setting the Panel Saver Function

The control panel illumination is automatically turned off if the unit is not operated for about an hour. This feature is called the panel saver function. In this mode, the unit displays "3100" (or "3200"), moving from right to left, in the pattern number indicator. The unit continues to output the video signal in this status. When the unit is next operated, either from the control panel or the editor, the illumination is automatically turned back on. The panel saver function is activated as the initial setting.

1 Press the SELECT button until a beep sounds.
This lights the STATUS indicator in the AUTO TRANSITION RATE group 4.

2 Press the left button of the SET buttons row to display "3" in the left of the FRAMES display.

3 Press the right button of the SET buttons row to display "3" in the right of the FRAMES display.

4 Press the CUT button of the EFFECTS TRANSITION group 7.
A beep sounds and the FRAMES display shows "313".
Pressing the CUT button activates/deactivates the panel saver function.

Note
The setting of the panel saver function is retained even when the power is turned off. If the back-up power for the memory is exhausted or the memory is cleared, the setting of the panel saver function reverts to the initial setting when the power is next turned on. The setting of the panel saver function is not saved in the snapshot.

Composite/Betacam/RGB Setting for the Input Signals

Make the following switch settings according to the format of the signals input to the following connectors:

BVS-3200C/3200CP
- VIDEO IN 1 through 8 connectors
- KEY FILL INPUTS: EFF EXT 1 and 2 connectors
- KEY FILL INPUTS: DSK EXT connector
- CHROMA KEY IN connector

BVS-3100/3100P/3200/3200P
- CHROMA KEY IN connector

Note
The * marks in the following tables indicate the factory-set positions of the switches.

Settings for the BVS-3200C/3200CP

First select the signal format, component or composite, used in the video switcher (factory-presetting is component). And when component is selected, select Y/R-Y/B-Y or RGB for each input signal.

Component/Composite selection
Using the INPUT SELECT switch on the connector panel, select the appropriate format, composite or component video, for the signals input from the VIDEO IN 1 through 8 (primary inputs), EFF EXT 1/2 (effect key fill) and DSK EXT (downstream key fill) connectors.

INPUT SELECT switch setting

Setting	Input signal format	Connector
COMPOSITE	Composite	VIDEO IN 1–8 EFF EXT 1/2 DSK EXT
COMPONENT*	Y/R-Y/B-Y or RGB (Set on IV-25 board)	VIDEO IN 1–5 EFF EXT 2 DSK EXT
	Y/R-Y/B-Y	VIDEO IN 6–8 EFF EXT 1

Notes
- You cannot use component and composite signals at a time. But only the chroma key source signal is always component. (The chroma key source signal can be set to Y/R-Y/B-Y or RGB on the SD-20 board.)
- The VIDEO IN 6 through 8 and EFF EXT 1 connectors are set only for Y/R-Y/B-Y signals when the INPUT SELECT is set to COMPONENT.

Y,R-Y,B-Y/RGB selection

There are two component signal formats: Y/R-Y/B-Y and RGB.
When the INPUT SELECT switch is set to COMPONENT, each of
the input signals to the VIDEO IN 1 through 5, EFF EXT 2, DSK
EXT connectors can be set for either Y/R-Y/B-Y or RGB
independently.
To change the setting, detach the desired connector unit from the
main frame by loosening the coin screws on the connector unit.
Then select the appropriate component signal format using the
Y,R-Y,B-Y/RGB switch on the IV-25 board on the connector unit.

Y,R-Y,B-Y/RGB switch setting

Setting	Input signal format	Connector
Y,R-Y,B-Y *	Y/R-Y/B-Y	VIDEO IN 1–5 EFF EXT 2 DSK EXT
RGB	RGB	VIDEO IN 1–5 EFF EXT 2 DSK EXT

Adding a setup to the Betacam format output signals (only for the BVS-3200C)

The BVS-3200C processes the input signal in the Y/R-Y/B-Y format.
Therefore, when RGB signals are input to some of the VIDEO IN 1
through 5 connectors, the signals are converted into the Betacam-
format Y/R-Y/B-Y signals. In this case, a setup can be added to
the converted Betacam-format signal using the SET UP ON/OFF
switch on the IV-25 board inside the corresponding input
connector unit.

When the Betacam-format Y/R-Y/B-Y signals that are input to other
VIDEO IN connectors have a setup, add a setup also to the
Betacam-format signals converted from RGB signals by setting the
corresponding SET UP ON/OFF switch to ON. When the input
Betacam-format signals have no setup, set the SET UP ON/OFF
switch to OFF.

SET UP ON/OFF switch setting

Setting	Output Betacam signals
ON *	Have setups.
OFF	Have no setups.

Note

The levels of the converted Y/R-Y/B-Y signals can be adjusted
using the Y, R-Y, and B-Y VRs on the IV-25 board inside the
corresponding connector unit.

BVS-3100/3100P/3200/3200P

Using the CRK R-Y,B-Y/RGB switch on the SD-20 board behind the main unit front panel, select the appropriate signal format, Y/R-Y/B-Y or RGB, for the signal input to the CHROMA KEY IN connectors.

CRK R-Y,B-Y/RGB switch setting
(BVS-3100/3100P/3200/3200P)

Setting	Input signal format
R-Y,B-Y	Y/R-Y/B-Y (Betacam)
RGB*	RGB

Note

Be sure to set the CRK.P switch on the SY-138 board to NORM (factory-setting).

BVS-3200C/3200CP component mode

When the BVS-3200C/3200CP is operated in the component mode, you can switch how to select the chroma key source signal between the following two:
• using the signal input to the CHROMA KEY IN connector as the chroma key source.
• selecting the chroma key source from the primary input signals (VIDEO IN inputs) using the KEY BUS.

For the chroma key signal setting, set the following switches referring to the table below:
• CHROMA KEY IN switch (on the connector panel)
• CRK.P switch (on the SY-138 board)
• CRK R-Y, B-Y/RGB switch (on the SD-20 board)

BVS-3200C/3200CP component mode

Input connector for chroma key source	Signal format of chroma key source	Switch settings		
		CRK R-Y, B-Y/RGB (SD-20 board)	CRK.P (SY-138 board)	CHROMA KEY IN (connector panel)
CHROMA KEY IN	Y/R-Y/B-Y	R-Y, B-Y	NORM (factory setting)	CHROMA KEY IN (factory setting)
	RGB	RGB (factory setting)		
VIDEO IN (primary inputs)	Y/R-Y/B-Y	R-Y, B-Y	CRK.P	KEY BUS
	RGB*			

* When using an RGB signal, input it to one of the VIDEO IN 1 through 5 connectors, and set the Y, R-Y, B-Y/RGB switch on the IV-25 board to RGB.

Notes

• When selecting the chroma key source signal from the primary input signals using the KEY BUS, the selected signal can also be used as the chroma key fill signal.
• When feeding the chroma key source signal to CHROMA KEY IN connector, feed the chroma key fill signal to one of the VIDEO IN (primary inputs) connectors.

BVS-3200C/3200CP composite mode

When the BVS-3200C/3200CP is operated in the composite mode, only the input of the CHROMA KEY IN connector is used as the chroma key source signal.

For the chroma key fill, feed a composite video signal to either of the VIDEO IN (primary inputs), or KEY FILL INPUTS EFF EXT 1 or 2 connector.

Set the switches as shown in the table below.

BVS-3200C/3200CP composite mode

| Input connector for chroma key source	Signal format of chroma key source	Switch settings		
		CRK R-Y, B-Y/RGB (SD-20 board)	CRK.P (SY-138 board)	CHROMA KEY IN (connector panel)
CHROMA KEY IN	Y/R-Y/B-Y	R-Y, B-Y	NORM (factory setting)	CHROMA KEY IN (factory setting)
	RGB	RGB (factory setting)		

49

Adjustments

Phase Adjustment for Primary Input Signals

To use the switcher with various input signals, the primary input signals (input to the VIDEO IN connectors) fed from cameras, VTRs or character generators must be synchronized with a reference sync signal. When synchronized, phase adjustment is necessary. The illustration below shows connection examples for the phase adjustment using a waveform/vector monitor (eg. Tektronics 1750 for NTSC/1751 for PAL).

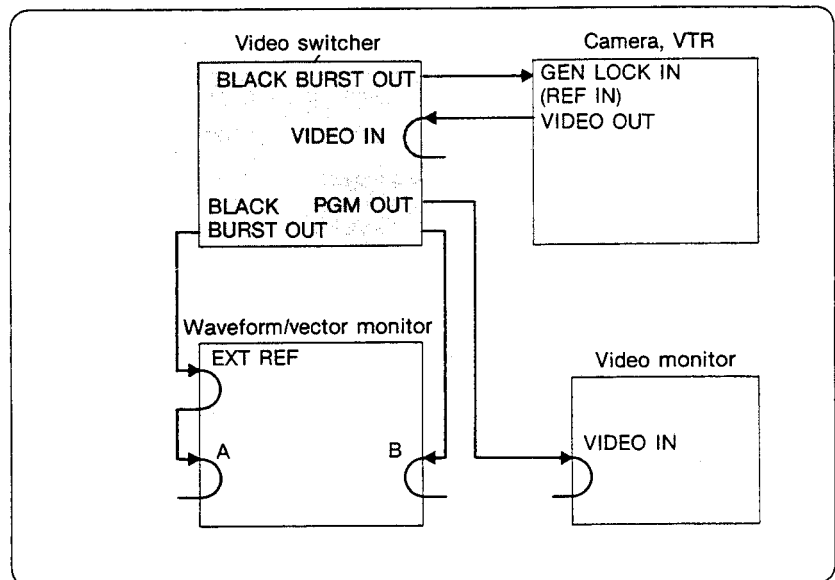### Connection examples

Synchronization using the externally-generated reference signal
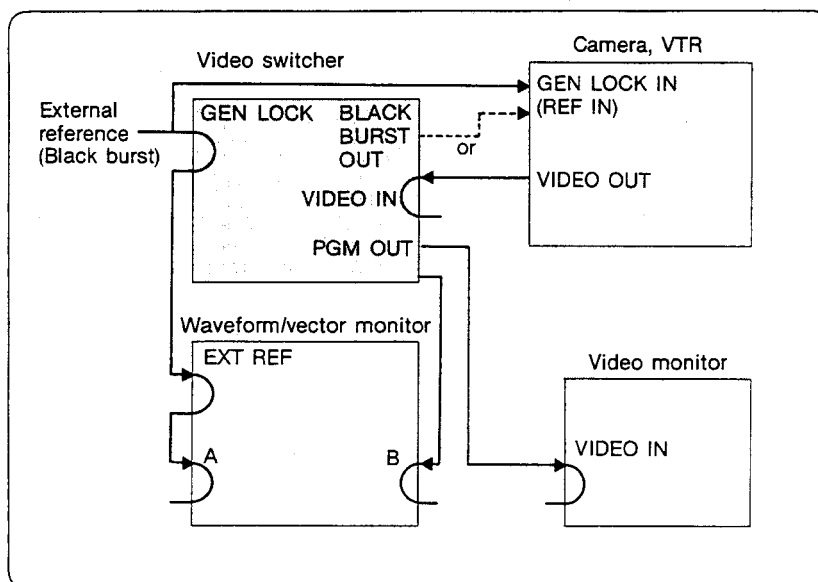
Note

When using the component video signal (on the BVS-3200C/32000CP), only the Y connectors are to be used in the VIDEO IN and PGM OUT connector groups.

Synchronization using the internally-generated reference signal

Video switcher

BLACK BURST OUT

VIDEO IN

BLACK   PGM OUT
BURST OUT

Waveform/vector monitor

EXT REF

A   B

Camera, VTR

GEN LOCK IN
(REF IN)
VIDEO OUT

Video monitor

VIDEO IN

Note

When using the component video signal (on the BVS-3200C/CP), only the Y connectors are to be used in the VIDEO IN and PGM OUT connector groups.

Adjustment procedures

First adjust the SCH phase of the color black signal in the switcher, and then adjust the phase of the primary input signals so that it becomes in phase with the color black signal (phase reference) on the connected equipment (cameras or VTRs).

Note

When using the black burst signal fed to the GEN LOCK connector for the sync/burst phase of the signal output from the PGM OUT connectors, perform the "1-B. Adjustment for the phase of the color black to that of the external sync" instead of the "1-A. Adjustment for the SCH phase of the color black signal".

1-A. Adjustment for the SCH phase of the color black signal
(When using the internal sync signal. Skip this if SCH phase cannot be shown on your waveform monitor.)

2, 7

SYNC
REPLACEMENT: ON
B.B. EXT/INT: INT

SYNC GEN LOCK
SC-PHASE FINE
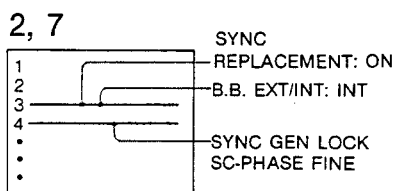
1 When operating the switcher using the internal sync, input no signal to the GEN LOCK connector.

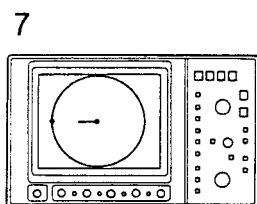**2** On the SD-19 board, set the SYNC REPLACEMENT switch to ON and set the B.B EXT/INT switch to INT.

3 Select BLACK both in the PROGRAM BACKGROUND bus and the PRESET BACKGROUND bus in the primary crosspoint buses group.

5, 6

SCH
PHASE
B INPUT
EXT REF

4 In the EFFECTS TRANSITION group, select WIPE and BKGD buttons and move the fader lever from one limit to the other.

5 Set the waveform/vector monitor in the SCH mode and set the EXT REF control to OFF (INT).

6 Select the B input, and rotate the PHASE control to place the burst vector on its graticule mark (direction of 9 o'clock).

7

7 Using the SYNC GEN LOCK SC-PHASE FINE VR on the SD-20 board, place the the dot representing SCH phase on its graticule mark.

1, 6 8-11

SYNC
REPLACEMENT

B.B EXT/INT

SYNC GENLOCK
H-PHASE

SYNC GENLOCK
SC-PHASE

4, 5

WFM
SWEEPS: 2H
B INPUT
EXT REF: ON
MAG: ON

HORIZ POS
VERT POS

7, 8

SCH
PHASE

10, 11
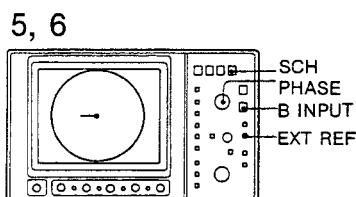
PHASE

1-B. Adjustment for the phase of the color black to that of the external sync

1 On the SD-19 board, set the SYNC REPLACEMENT switch to ON and set the B.B EXT/INT switch to EXT.

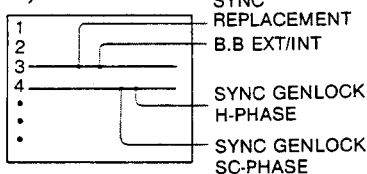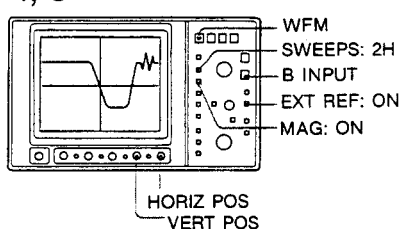**2** Select the BLACK in the PROGRAM BACKGROUND bus and the PRESET BACKGROUND bus.

3 In the EFFECTS TRANSITION group, select the WIPE and BKGD buttons and move the fader lever from one limit to the other.

4 Set the waveform/vector monitor in the WFM mode, and set the controls as follows:
   EXT REF: ON
    SWEEPS: 2H
    MAG: ON

5 Select the B input, and rotate the VERT POS and HORIZ POS controls to place the leading edge of the H sync pulse at the graticule center (or any line).

6 Set the B.B EXT/INT switch to INT; select the B input, and using the SYNC GEN LOCK H-PHASE COARSE switch and SYNC GENLOCK H-PHASE FINE VR on the SD-20 board, place the leading edge of the H sync pulse to the same position as you have set in step 5.
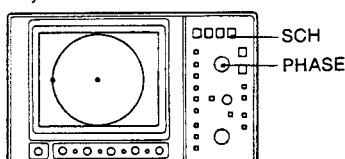
7 Set the waveform/vector monitor in the SCH mode.
(Skipped if the waveform monitor cannot show SCH phase.)

8 Set the B.B EXT/INT switch to EXT, and rotate the PHASE control to place the dot representing SCH phase to its graticule mark.
(Skipped if the waveform monitor cannot show SCH phase)

9 Set the B.B EXT/INT switch to INT, and adjust the phase of the sync of the color black signal finely, using the SYNC GEN LOCK H-PHASE FINE VR on the SD-20 board so that the dot representing SCH phase becomes concentrated on the point you have set in step 8.
(Skipped if the waveform monitor cannot show SCH phase)
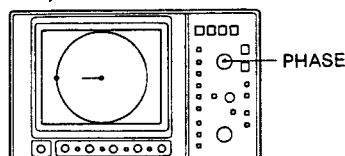
10 Set the B.B EXT/INT switch to EXT, and rotate the PHASE control to place the burst vector (to its graticule mark).

11 Set the B.B EXT/INT switch to INT, and adjust the phase of the subcarrier of the color black signal finely, using the SYNC GEN LOCK SC-PHASE 0°/180° switch and the SYNC GEN LOCK SC-PHASE FINE VR on the SD-20 board so that the burst vector becomes concentrated on the point you have set in step 10.

53

1, 15

SYNC
REPLACEMENT

```
1
2
3
4
.
.
.
```

7, 9

B INPUT

HORIZ POS

VERT POS

Converge the two leading
edges appearing alternately.

10, 11, 12

SCH

Converge the two burst
vectors.

Converge the two SCH
phase dots.

2. Adjustment for the phase of the primary input to that of the color black

1 On the SD-19 board, set the SYNC REPLACEMENT switch to OFF.

2 Select the STATUS mode using the SELECT button in the AUTO TRANSITION RATE group on the control panel.

3 Select the "910" (the mode for adjusting the phase of the input signal) with the SET buttons.

4 Select the BLACK in the PROGRAM BACKGROUND bus, and select the signal to be adjusted in the PRESET BACKGROUND bus.

5 In the EFFECTS TRANSITION group, select the WIPE and the BKGD buttons, and move the fader lever from one limit to the other.

6 Set the waveform/vector monitor in the WFM mode, and set controls as follows:
EXT REF: ON
SWEEPS: 2H
MAG: ON

7 Select the B input, and rotate the HORIZ POS and VERT POS controls to place the leading edge of the sync pulse at about the graticule center.

8 In the EFFECTS TRANSITION group, press the CUT button to set to the mode for adjusting the phase of input signals. In this mode, signals selected in the PROGRAM BACKGROUND bus and the PRESET BACKGROUND bus are alternately outout from the PGM OUT connectors.

9 Adjust the phase of the H sync on the TBC (Time Base Corrector) of the connected equipment (a camera or VTR) so that the two leading edges of the H sync pulses converge.
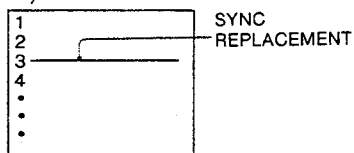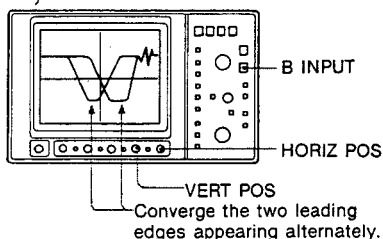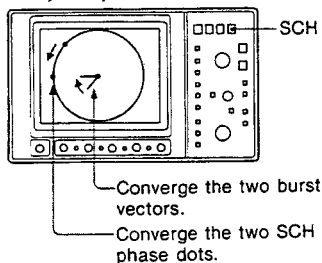
10 Set the waveform/vector monitor in the SCH mode. (Select the VECT mode if the waveform monitor cannot show SCH phase.)

11 Adjust the phase of the SC from the connected equipment so that the two burst vectors coverage into one line.

12 Adjust the phase of the H sync finely from the connected equipment so that the two SCH phase dots coverage into one spot. (Skipped if the waveform monitor cannot show SCH phase.)

Note
Steps 10 to through 12 are not required when using component video signals as the primary inputs on the BVS-3200C/CP.

54

13 Select a signal in the PRESET BACKGROUND bus and repeat steps 9 through 12 (9 on the BVS-3200C/CP set in component mode) to adjust the primary input signals from other connected equipment.

14 Press the CUT button to release the mode for adjusting the phase of the input signals.

15 Return the SYNC REPLACEMENT switch to ON.

Phase Adjustment for the External Key Sources/Fills

The signals supplied from cameras, VTRs and character generators and input to the KEY FILL INPUTS EFF EXT 1/2 (external key fill inputs) and to the KEY SOURCE INPUTS EFF EXT KEY 1/2 (external key source inputs) must be synchronized with the reference sync signal. An example of phase adjustment for external key fill and key source inputs is described in this subsection.
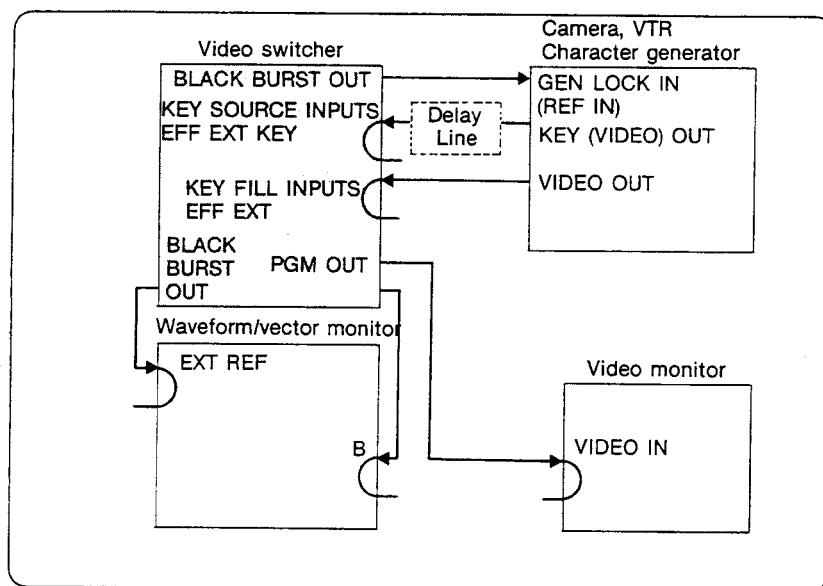
Connection example

Note

When using component video signal (on the BVS-3200C/3200CP), only the Y connectors are to be used in the VIDEO IN and PGM OUT connector groups.

Adjustment procedures

First adjust the phase between the key source and the key fill signals using a delay line, and then adjust the phase of the input key fill signal on the connected equipment (a camera or VTR with respect to the phase of the internally-generated color black signal (reference phase).

1 Supply character signals as the external key source and key fill signals from the connected equipment.

2 Create a key effect on a desired background using the supplied key source and key fill signals. (Refer to the operator's guide.)

5

```
┌─────────────────┐
│1                │  SYNC REPLACEMENT
│2     ┌──────────┤  : ON
│3 ────┘  ┌───────┤  B.B EXT/INT: INT
│4 ───────┘       │
│ •               │
│ •               │
│ •               │
└─────────────────┘
```
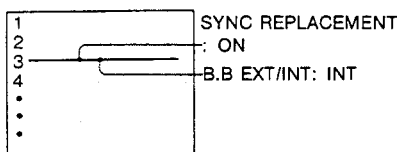
3 Viewing the characters on the video monitor, adjust the phases of the external key source and key fill signals using the delay line (which might be mounted in the character generator).

4 Supply the color bar signal (or a matte signal whose color phase is known) from the connected equipment.

5 On the SD-19 board, set the SYNC REPLACEMENT switch to ON and the B.B EXT/INT switch to INT.

6 Select the COLOR BKGD in the KEY BUS of the primary crosspoint buses group, and adjust the luminance level to about 100% and the chroma level to 0 using the LUM and CHROMA controls in the MATTE/BKGD group.

7 Select the PST PTN for the KEY SOURCE and turn the PRESET SIZE control fully clockwise in the EFFECT KEYERS group, and select the wipe pattern 1 and turn off the REVERSE button in the pattern control group.
(All of the key fill signal will be output by lighting up the KEY ON lamp in the EFFECTS TRASITION group.)

8 In the EFFECTS TRANSITION group, select the WIPE and BKGD buttons and move the fader lever from one limit to the other.

9 Select the STATUS mode using the SELECT button in the AUTO TRANSITION RATE group.

10 Select the "911" (the mode for adjusting the phase of the external effect key input signal) with the SET buttons. Press the CUT button in the EFFECTS TRANSITION group to start the mode for adjusting the phase of the external effect key input signal.

11 Select the KEY BUS for KEY FILL, and select the EXT VIDEO 1 or 2 for KEY FILL in the EFFECT KEYERS group.
The output signal at the PGM OUT connectors periodically changes between the internal color background and the external key fill.

12, 13

```
┌──────────────────┐
│ ┌─────────┐ ▣□□□ ├─ WFM
│ │         │ ○ ▣  ├─ SWEEPS: 2H
│ │  ┌┐     │ ·  · ├─ B INPUT
│ │ ┌┘└┐    │ ○ · ├─ EXT REF: ON
│ │─┘  └─   │ · ▣ ├─ MAG: ON
│ └─────────┘ ○    │
│ ○·○·○·○·○ ·      │
└──────────────────┘
     └──────── HORIZ POS
     └──────── VERT POS
```
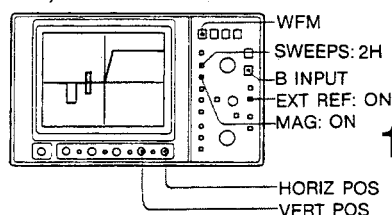
12 Set the waveform/vector monitor in the WFM mode, and set the controls as follows:
　　EXT REF: ON
　　SWEEPS: 2H
　　MAG: ON

13 Select the B input, and rotate the VERT POS and HORIZ POS controls to place the leading edge of the horizontal blanking pulse at about the graticule center.

14

15
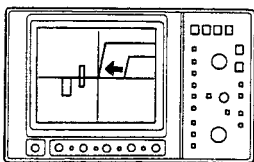
14 Adjust the phase of the H sync from the connected equipment (a camera or VTR) so that the two leading edges of the horizontal blanking pulses converge.
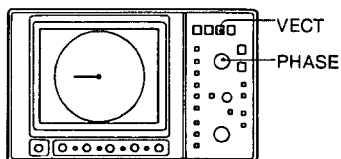
15 Set the waveform/vector monitor to the VECT mode, and rotate the PHASE control to place the burst vector on its graticule mark.

16 Adjust the phase of the subcarrier of the color bar (or color matte) from the connected equipment to place the color bar vectors on their graticule marks.

17 Press the CUT button in the EFFECTS TRANSITION group to release the mode for adjusting the phase of external effect key input signal.

Note

Steps 15 and 16 are not required when using component video signal as the primary inputs on the BVS-3200C/3200CP.

58

Phase Adjustment for the External DSK Source/Fill

The signals supplied from cameras, VTRs, and character generators and input to the following connectors must be synchronized with the reference sync signal.
- KEY SOURCE INPUTS DSK EXT KEY (BVS-3200C/3200CP) DSK EXT KEY (BVS-3100/3100P/3200/3200P)
- KEY FILL INPUTS DSK EXT (BVS-3200C/3200CP) DSK EXT VIDEO IN (BVS-3100/3100P/3200/3200P)

An example of phase adjustment for the external downstream key fill and key source inputs is described in this subsection.
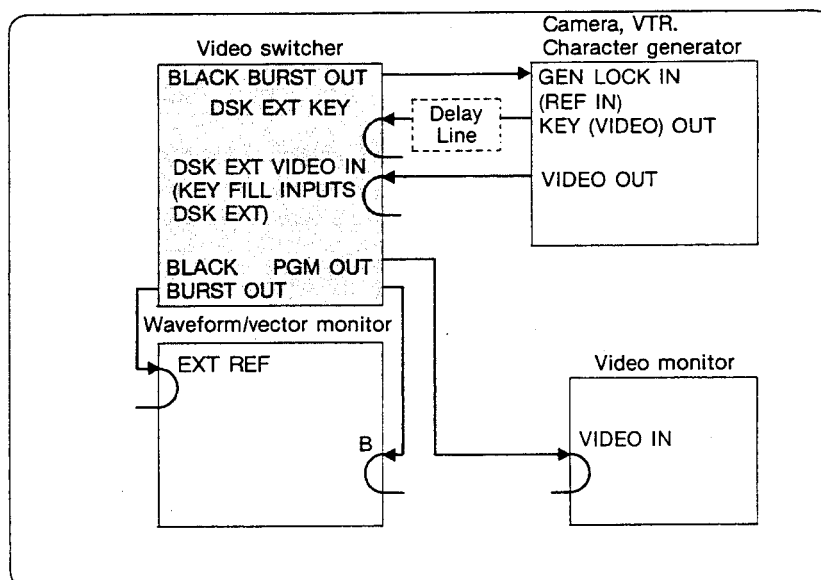
Connection example

Note

When using component video signal (on the BVS-3200C/3200CP), only the Y connectors are to be used in the KEY FILL INPUTS DSK EXT and PGM OUT connector groups.

Adjust as in the following procedures.

(1) Adjust the phase between the downstream key source signal and the downstream key fill signal using a delay line.

(2) Input the downstream key fill signal (currently input to the DSK EXT VIDEO IN connector) to the VIDEO IN (primary input) connector, and adjust the phase of the horizontal sync signal of the key fill signal using the controls on the connected equipment.

(3) Input the downstream key fill signal again to the DSK EXT VIDEO IN connector, and adjust the phase of the subcarrier of the downstream key fill signal on the connected equipment with respect to the phase of the internally-generated color black signal (reference phase).

1 Supply character signals as the external downstream key source and key fill signals from the connected equipment to the DSK EXT KEY and DSK EXT VIDEO IN connectors.

2 Create a downstream key effect on a desired background using the supplied downstream key source and downstream key fill signals. (See "Downstream Keying" in the operator's guide.)

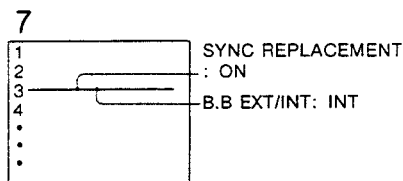**3** Viewing the characters on the video monitor, adjust the phase between the external downstream key source and key fill signals using the delay line (usually mounted in the character generator.)

4 Supply the character signal from the equipment generating the downstream key fill signal to the VIDEO IN generator.

5 Adjust the phase of horizontal sync signal of the input character signal, referring to steps 1 through 9 in "Phase adjustment for primary input signals—2. Adjustment for the phase of the color black to that of the external sync" (on page 51).

6 Input the external downstream key fill signal (which is currently input to the VIDEO IN connector) again to the DSK EXT VIDEO IN connector, as illustrated on page 56.

7

```
┌──────────────┐  SYNC REPLACEMENT
│1            │  : ON
│2      ┌───┐ │
│3 ─────┘   └─│ B.B EXT/INT: INT
│4           │
│•            │
│•            │
│•            │
└──────────────┘
```

7 On the DS-19 board, set SYNC REPLACEMENT switch to ON and set the B.B EXT/INT switch to INT.

8 Select the DSK MATTE mode using the SELECT button, and adjust the luminance level to about 100% and the chroma level to 0 using the LUM and CHROMA controls in the MATTE/BKGD group [5].

9 Select the EXT VIDEO as the signal to be adjusted in the KEY FILL group of the DOWNSTREAM KEYER group [6].

60

10 Select the KEY BUS for KEY SOURCE in the DOWNSTREAM KEYER group [6], and select the BLACK in the KEY BUS [1].

11 Turn off the KEY INVERT button, and turn the GAIN and CLIP controls fully clockwise in the DOWNSTREAM KEYER group [6].

12 Select the STATUS mode using the SELECT button in the AUTO TRANSITION RATE group [4].

13 Select the "912" (the mode for adjusting the phase of the external downstream key input signal) using the SET buttons. Press the CUT button int EFFECTS TRANSITION group to start the mode for adjusting the phase of the external downstream key input signal.
The output signal at the PGM OUT connectors periodically changes between the internal downstream key fill (downstream key matte) and the external downstream key fill.

14
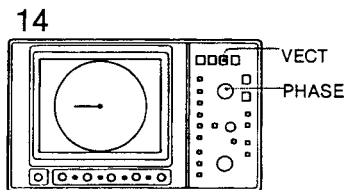
VECT
PHASE

14 Set the waveform/vector monitor to the VECT mode, and rotate the PHASE control to place the burst vector on its graticule mark.

15 Adjust the phase of the subcarrier of the character signal from the connected equipment to place the vector of a specific color on the proper position, making sure that the hue of the character signal is shown correctly on the video monitor.

16 Press the CUT button in the EFFECTS TRANSITION group to release the mode for adjusting the phase of the external downstream key input signal.

Notes
- Steps 7 through 16 are not required when using a component video signal as the primary inputs on the BVS-3200C/3200CP.
- It will be easy to adjust the subcarrier phase of the external downstream key fill signal in steps 7 through 16, if you make sure of the position of the vector of a specific color in the input character signal using the waveform/vector monitor before starting the adjustment. Proceed as follows:
  (1) Input the character signal to an unused channel ("A" in the connection example) of the waveform/vector monitor.
  (2) Set the EXT REF switch on the waveform/vector monitor to OFF.
  (3) Place the burst vector of the character signal to its graticule mark using the PHASE control on the monitor.
  (4) Make sure of the position of a specific color vector of the character signal on the waveform/vector monitor.

Phase Adjustment for Chroma Key Signal

The chroma key signal supplied to the CHROMA KEY IN connectors must be synchronized with the signals input to the VIDEO IN (primary inputs) or the EFF EXT 1/2 (external key fill inputs) connectors. An example of the phase adjustment for the chroma key signal is described in this subsection.

Note

When the BVS-3200C/3200CP is operated in the component mode, the chroma key source can be selected from the primary input signals. In this case, the following adjustments are not required if the phase adjustments of the primary input signals are completed.

Connection example

Input the chromakey signal to the CHROMA KEY IN connectors, and input the background signal for chroma keying to one of the VIDEO IN connectors.
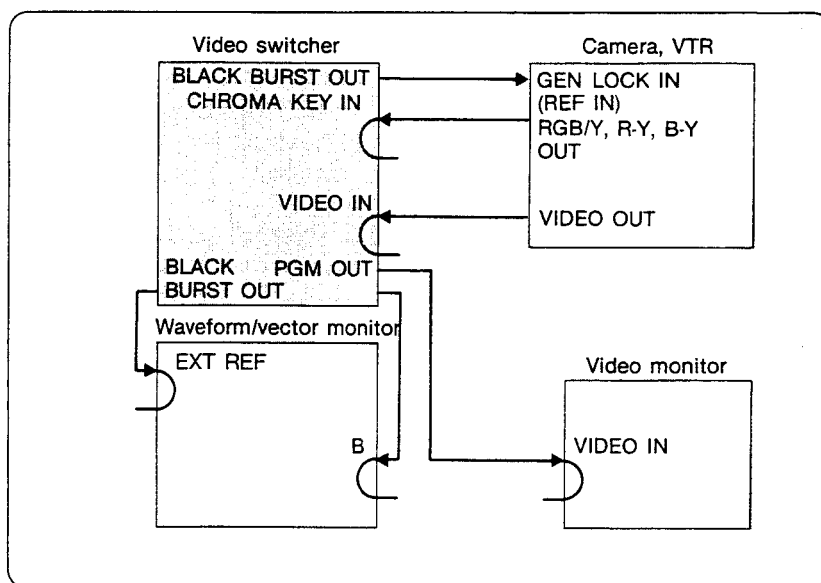
Adjustment procedures

1 First adjust the phase between the chroma key source signal and the chroma key fill signal using the delay line.
If the phase of the chroma key source signal is not in phase with the chroma key fill signal, the edges of the chroma key foreground look doubled.

2 In this case, set the S601, S602 and S603 switches on the SD-20 board so that the edges of the chroma key foreground look clearest.
The amount of delay for the chroma key source signal set by the these switches is shown in the table on the next page.

3 Adjust the phase of the inputs signal of the VIDEO IN or EFF EXT connector with respect to the phase of the internal color black signal.
For details, see the "Phase Adjustment for the External Key Sources/Fills" or "Phase Adjustment for External DSK Source/ Fill".

Relationship between the S601/602/603 switches and the delay time of the chroma key signal

O: ON

| Delay (nsec)	S601								S602								S603					
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6
0																					O	O
30									O	O										O		
60									O		O									O		
90									O			O								O		
120									O				O							O		
150									O					O						O		
180									O						O					O		
210									O							O				O		
240									O								O			O		
270									O									O		O		
300									O										O	O		
330	O	O					O			O										O		
360	O	O					O				O									O		
390	O	O					O					O								O		
420	O	O					O						O							O		
450	O	O					O							O						O		
480	O	O					O								O					O		
510	O	O					O									O				O		
530	O	O	O	O				O		O										O		
540	O	O					O										O			O		
560	O	O	O	O				O			O									O		
570	O	O					O											O		O		
590	O	O	O	O				O				O								O		
600	O	O					O												O	O		
620	O	O	O	O				O					O							O		
650	O	O	O	O				O						O						O		
680	O	O	O	O				O							O					O		
710	O	O	O	O			O									O				O		
740	O	O	O	O			O										O			O		
770	O	O	O	O				O										O		O		
800	O	O	O	O				O											O	O		
830	O	O	O	O	O	O				O										O		
860	O	O	O	O	O	O					O									O		
890	O	O	O	O	O	O						O								O		
920	O	O	O	O	O	O							O							O		
950	O	O	O	O	O	O								O						O		
980	O	O	O	O	O	O									O					O		
1010	O	O	O	O	O	O										O				O		
1040	O	O	O	O	O	O											O			O		
1070	O	O	O	O	O	O												O		O		
1100	O	O	O	O	O	O													O	O		

Phase Adjustment for DME-450 Signals

The signals supplied to the DME-450 series digital multi effects can be synchronized with the color black signal generated in the BVS-3100/3200/3200C series video switcher, by adjusting the phase of the black burst signal output from the AUX B.B connector. An example of the adjustment procedures is described in this subsection.

Connection example
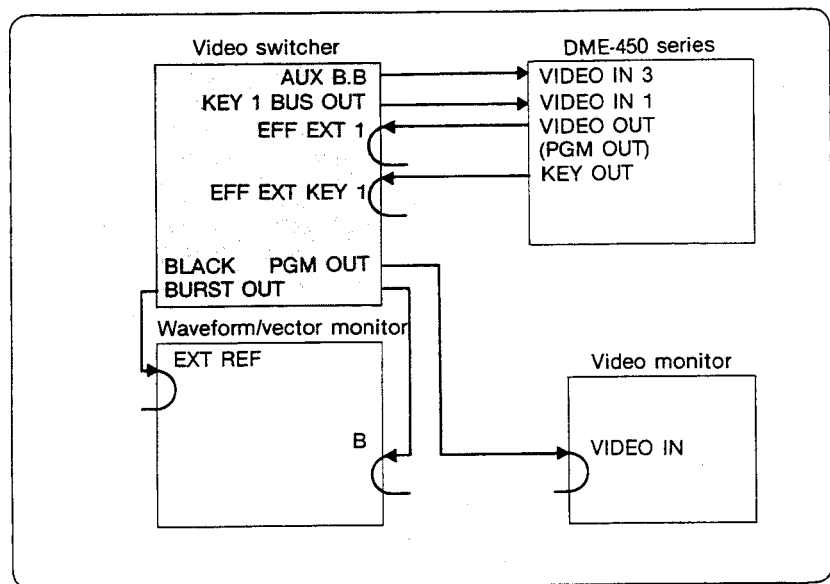
Adjustment procedures

1 On the SD-19 board, set the SYNC REPLACEMENT switch to ON and the B.B EXT/INT switch to INT.

2 Select the DME button in the EFFECTS TRANSITION group.

3 Select the pattern number "1100" (picture-in-picture) and press the POSITIONER button to turn it off in the pattern control group.

4 Press the KEY 1 SELECT button, and select the KEY BUS for KEY SOURCE in the EFFECT KEYERS group.

5 Select the color bar signal in the PROGRAM BACKGROUND bus and KEY BUS of the primary crosspoint buses group.

6 While moving the fader lever to display picture from the DME-450 in the sub-screen of the picture-in-picture effect, adjust the AUX B.B H-PHASE COARSE switch and AUX B.B H-PHASE FINE VR on the SD-20 board so that the center of the subscreen stays in the center of the monitor screen.

7 Move the fader lever so that the size of the sub-screen becomes 80% of the monitor screen.

8 Select the BLACK in the PROGRAM BACKGROUND bus of the primary crosspoint buses group.

9 Set the waveform/vector monitor to the VECT mode.

10 Adjust the AUX B.B SC-PHASE 0°/180° switch and AUX B.B SC-PHASE FINE VR on the SD-20 board so that the vectors of the color bar signal are placed to their graticule marks.

Note

Steps 9 and 10 are not required when using the component video signal for the primary and key inputs on the BVS-3200C/3200CP.

Phase Adjustment for DFS-500 Signals

The signals supplied to the DFS-500/500P DME switcher can be synchronized with the black burst signal by adjusting the phase of the black burst signal output from the BLACK BURST connector. To adjust the phase and level of signals, use VRs and switches on the DFS-500/500P so that the picture output from the PGM OUT connector of the DFS-500/500P is equal to the picture of the BVS-3000 series.

An example of tha adjustment procedures is described in this subsection.

Connection example
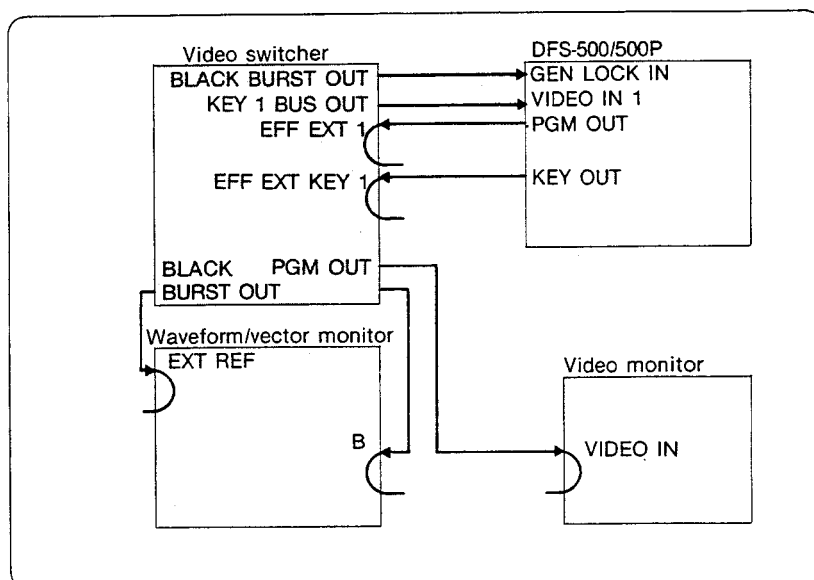
Adjustment procedures

Adjustment for the horizontal sync and subcarrier phases

1 On the SD-19 board, set the SYNC REPLACEMENT switch to ON and the B.B EXT INT switch to INT.

2 In the KEY 1 BUS crosspoint, select the color bar signal.

3 Select the effect pattern of number 1056 on the DFS-500/500P, and press the AUTO TRANS button. Then the color bar signal appears on the monitor screen.

4 Set the transition mode to KEY 1.

5 In the PROGRAM BACKGROUND bus select the color bar signal.

6 Execute the wipe of number 3, so that both the color bar signal and the signal of the DFS-500/500P appear on the monitor screen, dividing the screen at the center.

7 On the DA-63 board of the DFS-500/500P, align the positions of both color bar signals with the GEN LOCK/H PHASE FINE VR and the GEN LOCK/H PHASE COARSE switch.

8 Set the waveform/vector monitor to the VECT mode.

9 On the DA-63 board of the DFS-500/500P, adjust the hue of both color bar signals with the GEN LOCK/SC PHASE FINE VR and the GEN LOCK/SC PHASE COARSE switch while watching the waveform/vector monitor.

Note

Step 8 and 9 are not required when using the component video signal for the system.

Adjustment for the phase of the key signal

1 Select the effect pattern of number 1100 on the DFS-500/500P, and execute the effect with the fader lever until the picture appears on the half of the screen.

2 Press the BORDER button on the DFS-500/500P, and the border is added to the effect pattern. Set the width of the border to the minimum with the WIDTH/SOFT control.

3 Adjust the width of the left and right borders of the effect pattern of number 1100 to equal width with the KEY OUT DELAY switch on the DA-63 board of the DFS-500/500P.

Adjustment for the level of the key-fill signal

1 Select the color bar signal in the KEY 1 BUS crosspoint.

2 Select the effect pattern of number 1056 on the DFS-500/500P, and press the AUTO TRANS button. The color bar signal appears on the program monitor screen.

3 Set the transition mode to KEY 1.

4 In the PROGRAM BACKGROUND bus, select the color bar signal.

5 Execute the wipe of number 3 so that the color bar signal and key signal of the DFS-500/500P appear on the monitor screen dividing the screen at the center.

6 Set the waveform/vector monitor to the WFM mode.

7 Align the video signal level of both pictures with the PGM OUT GAIN COMPONENT VR (for the component system), the PGM OUT GAIN COMPOSITE VR (for the composite system) or the PGM OUT GAIN Y/C VR (for the Y/C system) while watching the waveform monitor.

For details of the adjustment for the DFS-500/500P, refer to the operating instructions of the DFS-500/500P.

Fader Lever Torque Adjustment

The torque when moving the fader lever can be adjusted by turning the crosshead screw located to the right of the lever. Turn the screw clockwise to increase the torque of the lever. Turn it counterclockwise to decrease the torque of the lever.

Specifications

[ ]: Specifications for BVS-3200C/3200CP

Signal system

BVS-3100/3200/3200C: NTSC system
BVS-3100P/3200P/3200CP: PAL system

Input video characteristics

Characteristics / Connector	Amplitude	Return loss	Type (number)
VIDEO IN	1 Vp-p, Composite or noncomposite [Betacam or RGB]	40 dB or more 15 k to 5 MHz	BNC (8), L.T. [BNC (5), L.T. BNC (3), Termi. 12-p (3), Termi.]
KEY SOURCE INPUTS/ KEY FILL INPUTS	1 Vp-p, composite or noncomposite [Betacam or RGB]	34 dB or more 15 k to 5 MHz	EFF EXT BNC (2), L.T. EFF EXT KEY BNC (2), L.T. [BNC (1), L.T. BNC (1), Termi. 12-p (1), Termi.]
DSK/ EXT MASK	1 Vp-p, composite or noncomposite [Betacam or RGB]	34 dB or more 15 k to 5 MHz	DSK EXT (VIDEO IN) BNC (1), Termi. [BNC (1), L.T] DSK EXT KEY BNC (1), Termi. [BNC (1), L.T.] EXT MASK BNC (1), Termi.
CHROMA KEY IN	Betacam or RGB	34 dB or more 15 k to 5 MHz	BNC (1), Termi. [12-p (1), BNC (1), L.T.]
GEN LOCK	Standard level black burst	40 dB or more 15 k to 5 MHz	BNC (1), L.T.

L.T.: loop-through.
Termi: Terminated.

Output video characteristics

Characteristics / Connector	Amplitude	DC on BLK	Return loss	Type (number)
PGM OUT	1 Vp-p composite [Betacam]	±50 mV	≧ 34 dB 15 k–5 MHz	BNC (2), composite [BNC (2), composite BNC (1), Betacam 12-p (1), Betacam]
PVW OUT	1 Vp-p composite	±100 mV	≧ 34 dB 15 k–5 MHz	BNC (1), composite
KEY 1 BUS OUT	1 Vp-p composite [Betacam]	±100 mV	≧ 34 dB 15 k–5 MHz	BNC (1), composite [12-p (1), Betacam]
BLACK BURST OUT/ AUX B.B	Standard level	±100 mV	≧ 34 dB 15 k–5 MHz	BLACK BURST OUT BNC (4) AUX B.B BNC (1)

Mix/effects characteristics

Mix tracking error	Gain ≦0.5%, DC ≦5 mV [Y/C ≦1.0%, C/C ≦1.0%]
Chroma linearity error	Gain ≦0.5%, Phase ≦0.5%

Video system characteristics

Characteristics \ Signal	Primary/Key fills		DSK fills	
Short Time Waveform Distortion	≦0.5%		≦0.5%	
Line Time Waveform Distortion	≦0.5%		≦0.5%	
Field Time Waveform Distortion	≦0.5%	[Y signal only]	≦0.5%	[Y signal only]
K_2T	≦0.5% K_P		≦1.0% K_P	
K_{PB}	≦0.5% K_{PB}		≦1.0% K_{PB}	
Freq. Response				
300 k to 5.5 MHz	±0.1 dB		±0.2 dB	
5.5 to 8.0 MHz	+0.1/−1 dB		+0.2/−2 dB	
8.0 to 20 MHz	Smooth roll-off		Smooth roll-off	
Freq. Response		[R-Y/ B-Y signal only]		[R-Y/ B-Y signal only]
300 k to 2.0 MHz	±0.1 dB		±0.2 dB	
2.0 to 3.0 MHz	+0.1/−1 dB		+0.2/−1 dB	
3.0 to 20 MHz	Smooth roll-off		Smooth roll-off	
DP (10 to 90% APL)	≦0.5°		≦0.5°	
DG (10 to 90% APL)	≦0.5%		≦0.5%	
YC inequalities	≦10 ns, ≦0.1 dB		≦10 ns, ≦0.1 dB	
S/N (unweighted)	≧65 dB		≧65 dB	
	[Y ≧60 dB		[Y ≧60 dB	
	C ≧54 dB]		C ≧54 dB]	
Crosstalk (DC—4.43 MHz)	≦−54 dB			
	[Y ≦−54 dB			
	C ≦−46 dB			
	Crosstalk between channels			
	C to Y ≦−50dB			
	Y to C ≦−40 dB			
	C to C ≦−40 dB]			
Path length deviation	≦1.5°/fsc [≦2.0°/fsc]			
Gain Deviation	≦1.0%		≦3.0%	
X-point transients	≦50 mV		N/A	
[Timing]	Y to C ±10 ns			
	C to C ±10 ns			
	(PGM OUT Y/R-Y/B-Y)			
Composite output in component mode				
• Freq. Response				
300 k to 5.5 MHz	±0.2 dB		±0.2 dB	
5.5 to 8.0 MHz	+0.2/−1 dB		+0.2/−1 dB	
8.0 to 20 MHz	Smooth roll-off		Smooth roll-off	
• Y/C delay	≦20 ns		≦20 ns	

Gen-lock range   STD level ±6dB, fsc ±20 Hz (NTSC)/ fsc ±5 Hz (PAL)

Subcarrier stability   fsc ±10 Hz (NTSC)/fsc ±2 Hz (PAL)

System timing (Ref: Primary inputs)

BVS-3100/3100P
BVS-3200/3200P

	(←Advance)	(Reference)			(Delay→)
	−100ns	0ns	+100ns	+200ns	+300ns

\<Inputs\>

Primary inputs
(VIDEO IN)
(0ns)

KEY FILL INPUTS
EFF EXT 1/2
(+3±5ns)

KEY SOURCE INPUTS
EFF EXT KEY 1/2
(0±50ns)

KEY FILL INPUTS
DSK EXT
(+160±15ns)

KEY SOURCE INPUTS
DSK EXT KEY
(+20±50ns)

CHROMA KEY IN
(−1.1μs to −50ns)
(Adjustable in 30ns steps)

\<Outputs\>

PGM OUT
(+220±10ns)

PVW OUT
(+220±10ns))

KEY 1 BUS OUT
(+30±5ns)

BLACK BURST OUT
(+20±10ns)

GEN LOCK range
(Adjustable range −1μs to +1μs)

AUX B. B range
(Adjustable range −0.7μs to +0.3μs)

73

BVS-3200C/3200CP

	(←Advance)	(Reference)			(Delay→)
	−100ns	0ns	+100ns	+200ns	+300ns

\<Inputs\>

Primary inputs
(VIDEO IN) .... (0ns)

KEY FILL INPUTS
EFF EXT 1/2 .... (+3±5ns)

KEY SOURCE INPUTS
EFF EXT KEY 1/2 .... (0±50ns)

KEY FILL INPUTS
DSK EXT .... (+160±15ns)

KEY SOURCE INPUTS
DSK EXT KEY .... (+20±50ns)

CHROMA KEY IN
(−1.1μs to 0ns)
(Adjustable in 30ns steps)

\<Outputs\>

PGM OUT .... (+280±10n s)

PVW OUT .... (+280±10n s)

KEY 1 BUS OUT .... (+30±5ns)

BLACK BURST OUT .... (+20±10ns)

GEN LOCK range
(Adjustable range −1μs to +1μs)

AUX B. B range
(Adjustable range −0.7μs to +0.3μs)

Interface characteristics

	TALLY	D-SUB 25-pin For eight inputs or buttons from VIDEO IN 1 to 8, EFF EXT KEY 1/2, KEY FILL INPUTS EFF EXT 1/2, DSK EXT KEY, DSK EXT VIDEO IN, CHROMA KEY IN, PST PTN, EXT MASK, EFF MATTE, DSK EXT, DSK MATTE, FADE TO BLACK, DSK MIX, AUTO TRANS 200 mA 24 V
	GPI	D-SUB 15-pin AUTO TRANS/FADE TO BLACK/ DSK MIX/GPI SEL, L: active
	EDITOR	D-SUB 9-pin, RS-422
	DME-450	D-SUB 9-pin, RS-422
	CONTROL PANEL	D-SUB 25-pin, RS-422

General characteristics

	Power requirements	BVS-3100/3200/3200C:
		  AC 100 to 120 V, 60 Hz
		BVS-3100P/3200P/3200CP:
		  AC 220 to 240 V, 50/60 Hz

	Power consumption	BVS-3100: 125 W, BVS-3100P: 125 W BVS-3200: 140 W, BVS-3200P: 140 W BVS-3200C: 190 W, BVS-3200CP: 190 W
	Temperature range	-20 to 60°C (-4 to 140°F) (storage) 0 to 40°C (32 to 104°F) (operating) 10 to 35°C (50 to 95°F) (for specifications)
	Relative humidity	80% or less (operating) 70% or less (for specifications)
	Dimensions (W/H/D)	
	Control panel	424 × 111 × 400 mm (16¾ × 4⅜ × 15¾ inches)

	Main unit	BVS-3100/3200: 424 × 132 × 350 mm
		          (16¾ × 5¼ × 13⅞ inches)
		BVS-3100P/3200P: 424 × 132 × 397 mm
		          (16¾ × 5¼ × 15¾ inches)
		BVS-3200C/3200CP: 424 × 176 × 450 mm
		          (16¾ × 7 × 17¾ inches)

	Weight	
	Control unit	4.4 kg (9 lb 7 oz)
	Main unit	13 kg (28 lb 8 oz) [18 kg (39 lb 8 oz)]

Design and specifications are subject to change without notice.

このマニュアルに記載されている事柄の著作権は当社にあり，説明内容は機器購入者の使用を目的としています。
従って，当社の許可なしに無断で複写したり，説明内容（操作，保守等）と異なる目的で本マニュアルを使用することを禁止します。

The material contained in this manual consists of
information that is the property of Sony Corporation and
is intended solely for use by the purchasers of the
equipment described in this manual.
Sony Corporation expressly prohibits the duplication of
any portion of this manual or the use thereof for any
purpose other than the operation or maintenance of the
equipment described in this manual without the express
written permission of Sony Corporation.

Le matériel contenu dans ce manuel consiste en
informations qui sont la propriété de Sony Corporation et
sont destinées exclusivement à l'usage des acquéreurs de
l'équipement décrit dans ce manuel.
Sony Corporation interdit formellement la copie de
quelque partie que ce soit de ce manuel ou son emploi
pour tout autre but que des opérations ou entretiens de
l'équipement à moins d'une permission écrite de Sony
Corporation.

Das in dieser Anleitung enthaltene Material besteht aus
Informationen, die Eigentum der Sony Corporation sind,
und ausschließlich zum Gebrauch durch den Käufer der
in dieser Anleitung beschriebenen Ausrüstung bestimmt
sind.
Die Sony Corporation untersagt ausdrücklich die
Vervielfältigung jeglicher Teile dieser Anleitung oder den
Gebrauch derselben für irgendeinen anderen Zweck als
die Bedienung oder Wartung der in dieser Anleitung
beschriebenen Ausrüstung ohne ausdrückliche schriftliche
Erlaubnis der Sony Corporation.